

Z
7991
Z87
NHREF

THE
ZOOLOGICAL RECORD

VOLUME THE FORTY-FIRST

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1904.

BY D. SHARP, R. LYDEKKER, R. BOWDLER SHARPE, G. A. BOULENGER, W. T.
CALMAN, E. R. SYKES, E. A. SMITH, EUGÈNE SIMON, FILIPPO SILVESTRI,
ALICE L. EMBLETON, F. A. BATHER, W. WOODLAND, AND H. M. WOODCOCK.

EDITED (FOR THE ZOOLOGICAL SOCIETY OF LONDON) BY

DAVID SHARP, M.A.; F.R.S., F.Z.S., &c.

Curator in Zoology, University Museum of Zoology, Cambridge.

Explore solum: sic fit via certior ultra.

LONDON:

PRINTED FOR THE SOCIETY;

SOLD AT THEIR HOUSE IN HANOVER SQUARE.

M.DCCCXCV.

Communications, Papers, and Memoirs intended for this work should be addressed to "THE EDITOR of the Zoological Record, Zoological Society, 3, Hanover Square, London, W. It is earnestly requested that in the case of separately-printed copies of papers so forwarded, the *original pagination* may be indicated.

The Editor thanks those Societies and individuals who have forwarded works and papers for the purposes of the Record, and suggests that Societies publishing Zoological Papers would much facilitate the work of the Recorders by forwarding a separate copy of each Zoological Memoir they publish to the Editor for the use of the Recorder. This is preferable to sending the entire volume, because each paper can go directly to the Recorder it concerns.



CAMBRIDGE:
PRINTED BY JOHN CLAY, M.A.
AT THE UNIVERSITY PRESS.

XIII. INSECTA.

BY D. SHARP.

CONTENTS.

	Page		Page
INTRODUCTION	3	BIOLOGY— <i>continued.</i>	
I. TITLES	6	3. Palaearctic region (a.	
II. BIOLOGY: SUBJECT-INDEX.		collective)	98
Anatomy and Physiology	82	b. Europe (collective)	99
Ethology	85	c. British Islands	99
Development	88	d. North Europe,	
General Subjects:—		Siberia	104
Variation & Teratology	89	e. Centr. & East.	
Hybrids	90	Europe	104
Colour	90	f. France	106
Protection	90	g. South. Europe and	
Resemblance	91	Mediterranean	108
Phylogeny, Evolution,		h. Caucasus & West	
Heredity	91	& Central Asia	110
Galls	91	4. Africa	110
Insects & Flowers & Plants	92	5. Madagascar, etc.	113
Collections, Preservation,		6. Tropical & East. Asia	113
Museums, Nomenclature	92	7. Asiatic Archipelago	115
Bibliography	92	8. Australia & Tasmania	117
Biography	93	9. North America	118
Obituary Notices	93	10. Central America	121
Economic Entomology	94	11. Antilles	122
Faunistic:—		12. South America	122
General	97	Palæo-entomology	124
1. Arctic & Antarctic	97	III. SYSTEMATIC INDEX.	126
2. Insular, incl. N. Zealand	97		

(a) COLEOPTERA (incl. STREPSIPTERA).

	Page		Page		Page
General	127	Mycetophagidæ	148	Cistelidæ	169
Cicindelidæ	127	Thorictidæ	148	Melandryidæ	169
Carabidæ	128	Dermostidæ	148	Lagriidæ	169
Halipidæ	132	Byrrhidæ	148	Anthicidæ, Pede-	
Dytiscidæ	132	Parnidæ and		lidæ	169
Gyrinidæ	133	Heteroceridæ	148	Rhipiphoridæ	170
Hydrophilidæ	133	Lucanidæ	149	Stylopidæ	170
Staphylinidæ	133	Passalidæ	149	Mordellidæ	170
Pselaphidæ	139	Scarabæidæ	150	Cantharidæ	170
Paussidæ	144	Buprestidæ	158	Ægialitidæ, Pyro-	
Scydmanidæ	144	Throscidæ (vacant)		chroidæ, Pythi-	
Silphidæ	144	Eucnemidæ	160	dæ, Oedemeridæ	171
Trichopterygidæ	145	Elateridæ	160	Curculionidæ	171
Scaphidiidæ	145	Rhipiceridæ and		Scolytidæ	182
Histeridæ	145	Dascillidæ	162	Brenthidæ	183
Phalacridæ (vacant)		Malacodermidæ	162	Anthribidæ	183
Nitidulidæ	146	Cleridæ	163	Cerambycidæ	185
Monotomidæ (vacant)		Lymexylonidæ &		Bruchidæ	189
Trogositidæ (vacant)		Cupesidæ (vacant)		Chrysomelidæ	190
Colydiidæ	146	Ptinidæ	164	Erotylidæ	198
Rhysodidæ	147	Bostrychidæ	164	Endomychidæ	198
Cucujidæ	147	Cloidæ	165	Coccinellidæ	198
Cryptophagidæ	147	Tenebrionidæ	165	Proterrhinidæ	198
Lathridiidæ	147				

(b) HYMENOPTERA.

	Page		Page		Page
General	199	Hymenoptera		Proctotrypidæ and	
Aculeata—		parasitica	218	Peleciniidæ	233
Apidæ	199	Ichneumonidæ	218	Cynipidæ	235
Masariidæ, Ves-		Braconidæ	223	Sessiliventre—	
pidæ, etc. . . .	207	Evaniidæ	225	Cephidæ, Siri-	
Fossoria	209	Trigonalidæ (va-		cidæ & Orys-	
Formicidæ	214	cant), Stepha-		sidæ	236
Chrysidæ	217	nidæ	226	Tenthredinidæ .	236
		Chalcididæ	226		

(c) LEPIDOPTERA.

	Page		Page		Page
General	238	Rhopalocera—		Heterocera—	
Rhopalocera—		Satyridæ	246	Noctuidæ, etc. . .	265
General	238	Erycinidæ,		Geometridæ,	
Papilionidæ	239	Libytheidæ	247	Epiplemidæ,	
Pieridæ	240	Lycænidæ	248	Uraniidæ	271
Danaidæ and		Hesperiidæ	251	Pyrallidæ, Thy-	
Ithomiidæ	241	Heterocera—		rididæ	286
Acraeidæ, Heli-		Castniidæ (vacant)		Pterophoridaæ . .	291
coniidæ	242	Sphingidæ	252	Tortricidæ	291
Nymphalidæ	242	Sesiidæ	253	Tineidæ	292
Brassolidæ,		Bombyces, etc. . .	254		
Morphidæ, etc. .	245				

(d) DIPTERA.

	Page		Page		Page
General	297	Stratiomyidæ,		Syrphidæ	306
Cecidomyiidæ	297	Scenopinidæ	303	Conopidæ	307
Mycetophilidæ	297	Tabanidæ	303	Phoridae, Terni-	
Chironomidæ	298	Leptidæ and The-		toxiidæ	307
Culicidæ	298	revidæ	304	Cestridæ	308
Simuliidæ, Bibio-		Asilidæ, Mydaidæ .	304	Muscidæ calyp-	
nidæ, Psycho-		Bombyliidæ	305	tratæ	308
didæ	302	Acroceridæ	305	Muscidæ acalyp-	
Dixidæ, Blepharo-		Empidæ	305	tratæ	310
ceridæ (vacant)		Dolichopidæ	306	Pupipara	312
Tipulidæ	302	Platypezidæ and		Aphaniptera	313
		Pipunculidæ	306		

(e) HEMIPTERA or RHYNCHOTA.

	Page		Page		Page
General	315	Hem.-Heteroptera—		Hem.-Homoptera—	
Hemiptera-Hetero-		Hydrometridæ,		Fulgoridæ	332
ptera—		Hebridæ	321	Flatides	334
Pentatomidæ	315	Reduviidæ etc. . .	322	Membracidæ	335
Coreidæ	319	Anthocoridæ, etc.	324	Cercopidæ	335
Lygæidæ and		Polycetenidæ . . .	324	Jassidæ	336
Pyrrhocoridæ . . .	320	Capsidæ	324	Psyllidæ	336
Tingidæ	321	Saldidæ	329	Aphidæ	337
Berytidæ (vacant)		Hydrocorisæ . . .	329	Aleurodidæ	338
Aradidæ	321	Hem.-Homoptera—		Coccidæ	338
Phymatidæ	321	Cicadidæ	330	Anoplura	339

(f) NEUROPTERA s. l. (incl. THYSANOPTERA).

	Page		Page		Page
Trichoptera	341	Termitidæ	345	Ephemeridæ	347
Planipennia	342	Embiidæ	346	Odonata	347
Psocidæ	344	Perlidæ	346	Thysanoptera	349
Mallophaga	344				

(g) APTEA.

Thysanura	350	Collembola	350
-------------------	-----	--------------------	-----

(h) ORTHOPTERA.

	Page		Page		Page
Forficulidæ	352	Mantidæ	355	Locustidæ	357
Hemimeridæ	353	Phasmidæ	355	Acridiidæ	358
Blattidæ	353	Gryllidæ	357		

INTRODUCTION.

THE Record of Insecta is not quite so extensive as that of last year, the number of titles being 1549 against 1716 for 1903. We have numerous important works to record.

HENNEGUY's general work, "Les Insectes," is up to date and on most points thoroughly reliable; it gives in a concise form the sort of information by the accumulation of which the progress of entomology is greatly affected; and is invaluable as a compendium of subjects that are often but little known to entomologists. A correction of an error in it as regards the question of coloration will be found in Bull. Soc. ent. France 1905, p. 146.

The subject of the Orders of Insects and their classification has been again discussed by HANDLIRSCH (657), HEYMONS (684); other papers on this point are given by BÖRNER (157) and KLAPÁLEK (815). Though there is a general consent that the Orders are more numerous than was formerly considered to be the case, the views of the authorities in other respects are very diverse.

SHIPLEY (1291) has proposed that the names of all Orders shall have an uniform termination, and if this result can be attained it will be very valuable. HANDLIRSCH has no less than twelve different terminations in the names of his 34 Orders. If Entomology is to be taught in schools of Zoology it is high time for the question of an uniform terminology for the complex taxonomy of Insecta to be discussed, and our thanks are due to Mr Shipley for his practical method of introducing the point.

DONCASTER (402) gives a preliminary paper on the parthenogenetic development of *Nematus*. Though the subject is of great interest, and will probably enlighten us as to the nature of the earliest processes of ontogeny, yet at present the information is too incomplete to warrant any conclusions.

MARCHAL (906) has given more fully the results of his work on germi-nogony—a term he wishes to replace that of embryonic dissociation. In this he is doubtless correct for the division takes place in the nuclei before the formation of a definite embryo. The work is of a most interesting and important nature.

MISS EMBLETON's memoir (450) on the anatomy and development of a Chalcid parasite of a scale-insect makes us acquainted with parts of a life-history of a remarkable character. Her accounts of the oogenesis and respiratory changes are particularly interesting, though only fragmentary.

The question of the number of segments from which the head is developed is discussed by RILEY (1173), who concludes that "sclerites originate from mechanical causes and do not necessarily have any relation to the primary segmentation." He admits six segments for the head. The same number is favoured by HOLMGREN (699), but it must be admitted that this conclusion is still hypothetical rather than demonstrated.

HILZHEIMER (686) gives a dissertation on the morphology of the labium and on the anatomy of the hypopharynx in *Hymenoptera*. DICKEL (379) resumes the question as to the nature of entoderm, taking the egg of the bee as his object; and SCHWANGART studies the same question in *Lepidoptera* (1259). VOSS (1461) contributes the first part of a study of the thorax of *Gryllus*, dealing with the skeleton; subsequent parts are to include the development of the wings, a subject that, as he justly remarks, has been greatly neglected in the lower Insects.

VERHOEFF (1435) discusses the morphology of leg and of hypopharynx ; and in a postscript announces that morphologists have hitherto been in error as to the maxillæ of Insects ; the labium being really the anterior, not the posterior, of the pairs of maxillæ. The same author gives an anatomical study (1434) of *Embiidæ*, treating them as a suborder of *Isoptera* ; and he also amplifies his views as to the structure of the thorax in *Hexapoda*. SCHAUDINN (1224) in his work on the life-history of a parasitic Protozoon, gives an account of the alimentary system and of the mode of feeding of *Culex pipiens*. He inclines to the opinion that the poisonous effect of its bite is due to the enzyme of a commensal fungus. VIGIER (1456) informs us that he has discovered an apparatus of accommodation in the eye of *Aeschna* for seeing at different distances.

RÖSSIG (1189) gives an interesting paper on the formation of galls of *Cynipidæ*, in the course of which he discusses the function of cenocytes. HOUARD (719) contributes an extensive paper on the structure of galls ; although predominantly botanical it treats of the determinants and is of considerable importance.

Some works on development have already been mentioned, but there are numerous others. The study of cuticula and ecdysis is now being pursued, and we have from PLOTNIKOW (1089) a valuable paper connected with the histology of the subject. ANGLAS (32) makes an important suggestion as to the relation of tracheæ to metamorphosis. BAUER (93) enlarges on the extreme changes that take place post-embryonically in the central nervous system.

DEEGENER (358) discusses the changes that take place in the mesenteric region, showing that there is a special pupal epithelium, acting functionally for the digestion or partial digestion of the "yellow-body." POWELL (1104) gives information as to the formation of wings of *Coleoptera* etc. ; maintaining that wings are outgrowths of the pleuron or tergum, or both ; a conclusion which seems at present the only one consistent with all the evidence that has been obtained. KELLOGG has experimented on larvæ of *Lepidoptera* and confirms the previous observation of Oudemans that extirpation of the sex glands does not affect the development of the secondary sexual characters (781). In metamorphosis see also papers by DEWITZ (377, 378) on the physiology thereof, including coloration and chitination, in which he is inclined to extend the importance of enzyme action.

ASHMEAD has nearly or quite completed his classification of the *Hymenoptera* by a huge contribution (41) on the important group *Chalcidoidea*, which he considers includes 14 families. RAFFRAY has published a general work on the *Pselaphidæ* (1114), a family he has made of the first importance. It is a matter for regret that he has been obliged to defer the execution of a monograph for the present. DE MEIJERE'S paper on *Conopidæ* (933) makes a large addition to our previously meagre knowledge of the biology of this curious family of parasitic *Diptera*. BAKER (76) has given a catalogue of fleas complete to date, with information as to works and localities, and has revised the American forms.

Amongst the remarkable events of the year must be placed the discovery in France of a new genus of blind *Dytiscidæ* in a deep well fed by a subterranean spring, ABEILLE (3). This gives considerable support to the idea that Cave faunas have their origin in a hypogeal fauna of which we know little or nothing. An anomalous insect from the nest of a Termite has been described by BREDDIN & BÖRNER (173) and assigned to *Rhynchota* on somewhat unsatisfactory grounds.

Among faunistic work we find the largest contribution in MEYRICK'S Australian *Gelechiidæ* with 207 new species. He estimates the Australian *Tineidæ* at about 2,000 species—more probably an underestimate rather than the reverse. The publication in complete form of the results of the Harriman Alaska expedition is very welcome. The insects make two nice

volumes: MERRIAM (940). HUTTON's list of the fauna of New Zealand is a work for which we owe our thanks to the author and his collaborators (726): the Insects occupy about 150 pp. JAMES & LISTON *Anopheles* of India is remarkable for the figures of mosquitoes it contains (760). The third part of E. E. GREEN's beautiful work on the *Coccidæ* of Ceylon (620) is devoted entirely to the genus *Lecanium*. The fourth volume of GANGLBAUER's valuable work on European Coleoptera includes a statement of his views as to the classification of this Order (580).

BRETHES (181) records some valuable experiments as to the habits of Aculeate *Hymenoptera*; they tend to support Fabre's views as to the skill displayed in stinging the prey. ADLERZ has given a short account of the habits of *Methoca ichneumonoides*, which appear to be of the most extraordinary and unexpected nature (16).

The fact that has given rise to much surprise of the use of larvae by ants for the formation of their nests has now been confirmed by its discovery on the other side of the world, the Messrs Göldi having observed that *Camponotus senex* constructs its nests in this fashion in S. America: FOREL (532). The information given by JACOBSON & WASSILJEV (741) adds to our knowledge of the habits of *Termitidæ*, the founding of a nest of *Hodotermes* having been witnessed and described by JACOBSON. Miss FIELDE & Miss PARKER have given an account (508) of a series of instructive experiments as to the sense of hearing in ants. Perhaps the most interesting of Miss Fielde's papers on ants is that on their power of recognition (506). Mr DWIGHT PIERCE has an interesting ethological article on hypermetamorphic beetles and their hosts, with special reference to the very curious *Myiodites* (1086). SCHWARZ (1260) tells us of a grass that catches insects in great quantities in Cuba. M. PERRAUD (1031, 1032) as the result of experiments is able to state the conditions that should be realised to attract *Lepidoptera* to light.

PACKARD (1006), whose decease will be generally regretted, gives an account of the origin of pattern from the Lamarckian stand-point, and accompanies it with a very sensible criticism of the fashionable theories of mimicry. KUSNEZOV has published an article (849) calling attention to the undeveloped state of the study of the markings of Lepidopterous larvae. ENTZ has a long discussion on mimicry, but unfortunately, as it is in Hungarian few of us can profit by it (466). PREPERS, who discusses the "tails" of Lepidopterous wings, apparently considers them as relicts from wings of larger size.

In the economic department Prof. J. B. SMITH's work (1315) on mosquito control is the most important production. DYÉ gives (444) a short and easily intelligible account of the relations of *Culicidæ* and their disease-dealing parasites.

Those who are interested in the—perhaps too extensive—chamber of horrors of entomology must not miss the New Congo floor maggot, DUTTON, TODD & CHRISTY (418).

The Polymorphism of ants is discussed by FOREL (525) & EMERY (452); the former of whom expresses a little doubt as to its causation. KELLOGG & BELL contribute a study of variation in 24 species of various Orders, and a discussion of general conclusions (783).

The naming of varieties is at present carried to a great extent, and we have not space to record them all, but we endeavour to point out all that appear to be of real importance. It may perhaps not be superfluous to add that the study of variation is by no means dependent for advancement on the naming of varieties.

I. TITLES.*

1. ABEILLE DE PERRIN, E. *Buprestides*. Bol. Soc. espan. iv, pp. 206-224. [*Coleoptera*.]
2. —. Description de deux nouveaux *Trechus* (*Anophthalmus*) de France. Bull. Soc. ent. France 1904, p. 198. [*Coleoptera*.]
3. —. Description d'un *Coléoptère* hypogé français. T. c. pp. 226-228.
4. —. Description de deux *Bathyscia* inédites des Basses-Pyrénées. T. c. pp. 242, 243. [*Coleoptera*.]
5. —. Diagnoses de trois *Coléoptères* français nouveaux. T. c. pp. 280-282.
6. ABSOLON, P. C. K. Descriptio systematica faunae subterraneae moravicae adhuc cognitae. Vestnik. Klub. Prostejove ii, 1900, pp. 60-68. [*Collembola*.]
Entirely in Moravian except the above translation of title.
7. —. Studie o jeskynních šupinuškách. Op. cit. iii, 1901, pp. 83-117. [*Collembola*.]
Entirely in Moravian.
8. ADAMS, C. F. Notes on and descriptions of North American *Diptera*. Kansas Univ. Sci. Bull. ii, No. 14, pp. 431-455.
9. —. On the North American species of *Siphonella*. Psyche xi, pp. 103, 104. [*Diptera*.]
10. —. Descriptions of new *Oscinidae*. Ent. News Philad. xv, pp. 303, 304. [*Diptera*.]
11. ADELUNG, N. Eine neue *Ectobia*, *E. duskei* n. sp. (*Orthoptera Blattodea*) vom Bogdo, sowie einige Bemerkungen über russische Varietäten der *E. perspicillaris* Herbst (*livida* Fabr.). Horae Soc. ent. Ross. xxxvii, pp. 127-137.
12. —. Blattodées (*Orthoptera*) rapportées par Mr le capitaine G. W. Kachovski de l'Abyssinie méridionale et des contrées limitrophes en 1898. Annuaire Mus. St. Petersb. viii, pp. 300-337, pl. xx.
13. ADLERZ, G. *Ceropales maculata* Fab. en parasitisk Pompilid. Bih. Svenska Ak. xxviii, Afd. iv, No. 14, 20 pp. [*Hymenoptera*.]
Omitted in 1902.
14. —. Utvecklingen af ett *Polistes*-samhälle. Ent. Tidskr. xxv, pp. 97-106. [*Hymenoptera*.]
15. —. Om cellbyggnad och tjufbin hos *Trachusa serratulæ* Panz. T. c. pp. 121-129. [*Hymenoptera*.]
16. —. La proie de *Methoca ichneumonides* Latr. Arkiv Zool. i, pp. 255-258. [*Hymenoptera*.]
17. AGNUS, A. N. Un nouvel insecte fossile du Carbonifère de Commeny. Naturaliste 1904, p. 29. [*Blattidae*.]
18. AGREN, H. Lappländische *Collembola*. Arkiv Zool. ii, No. 1, 30 pp., 2 plates.

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

19. AIGNER-ABAFI, L. v. Wanderzlige des Distelfalters. Allg. Zeitschr. Ent. ix, pp. 6-9. [*Lepidoptera*.]
20. AITKEN, E. H. The enemies of butterflies. J. Bombay Soc. xvi, p. 156. [*Lepidoptera*.]
21. ALDRICH, J. M. The genus *Psilopus* of authors. Canad. Ent. xxxvi, pp. 246, 247. [*Diptera*.]
22. ALFKEN, J. D. Beitrag zur Insectenfauna der Hawaiischen und Neu-seelandischen Inseln. (Ergebnisse einer Reise nach dem Pacific. Schauinsland 1896-97.) Zool. Jahrb. Syst. xix, pp. 561-628, pl. xxxii. Abstract by VON LINDEN, Zool. Zentrbl. 1904, p. 211.
23. —. Neue palearktische *Prosopis*-Arten und -Varietäten. Zeitschr. Hym. Dipt. iv, pp. 322-327. [*Hymenoptera*.]
24. —. *Andrena frey-gessneri*, eine neue alpine *Andrena*-Art aus der Schweiz. Soc. ent. xix, p. 81. [*Hymenoptera*.]
25. ALPHÉRAKY, S. Quelques observations critiques sur le Catalogue des *Lépidoptères* de MM. Staudinger et Rebel, 1901. Rev. Russe Ent. iv, pp. 1-10.
In Russian.
26. ANDERSON, E. M. Catalogue of British Columbia *Lepidoptera*. Victoria, 8vo, 56 pp.
Issued by provincial Museum, Victoria.
27. [ANDRÉ, E. Species des Hyménoptères d'Europe et d'Algérie. Fasc. 85-89. See KIEFFER & MARSHALL (799) and KIEFFER (791).]
28. —. Voyage de feu Leonardo Fea dans l'Afrique occidentale: *Mutillide*. Ann. Mus. Genova xli, pp. 221-252. [*Hymenoptera*.]
29. —. Notice sur quelques *Mutillides* et *Thynnides* du Chili. Zeitschr. Hym. Dipt. iv, pp. 284-288, 305-319. [*Hymenoptera*.]
30. —. Examen critique d'une nouvelle classification proposée par M. le Dr W. H. Ashmead pour la famille des *Mutillide*. Rev. Ent. franc. xxiii, pp. 27-41. [*Hymenoptera*.]
31. —. Catalogue analytique et raisonné pes *Lépidoptères* de Saône-et-Loire et des départements limitrophes. Bull. Soc. Autun xvi, pp. 1-81, 4 pls. [*Rhopalocera*.]
— [See also DE SAUSSURE, ANDRÉ & BUISSON (1218).]
32. ANGLAS, J. Rapports du développement de l'appareil trachéen et les métamorphoses des Insectes. C.R. Ac. Sci. cxxxviii, pp. 300, 301.
Translation, Ann. Nat. Hist. xiii, pp. 403, 404.
33. —. De l'origine des cellules de remplacement de l'intestin chez les *Hyménoptères*. C.R. Soc. Biol. lvi, pp. 173, 174.
34. —. Du rôle des trachées dans la métamorphose des Insectes. T. c. pp. 175, 176.
35. ANNANDALE, N. Contributions to the terrestrial zoology of the Faroes. Part I. P. Phys. Soc. Edinb. 1902-4, pp. 153-160.
Mollusca and *Arthropoda*. *Aptera* by G. H. CARPENTER. *Coccidæ* by R. NEWSTEAD.
36. ANTIGA Y SUNYER & BOFILL Y PICHOT, J. M. Catàlech de Insectes de Catalunya. *Hymenopters*.
Published in connection with Butl. Inst. Catalan. The parts at present published are *Chrysidida*, *Sphegida*, *Scoliida* and *Mutillida*, *Vespidæ*: each with separate pagination.

37. ARENBERG, PRINCE D'. Sur une expérience faite par la Compagnie de Suez pour la suppression du paludisme par la destruction des moustiques. C.R. Ac. Sci. cxxxviii, pp. 670-673.
38. ARROW, G. J. Sound production in the Lamellicorn beetles. Tr. ent. Soc. London 1904, pp. 709-750, pl. xxxvi. [*Coleoptera*.]
39. —. On the Coleopterous group "*Heptaphyllini*" of de Borre. Ann. Nat. Hist. xiv, pp. 30-33.
— [See also BATES (92).]
40. ASHMEAD, W. H. Classification of the fossorial, predaceous and parasitic wasps, or the superfamily *Vespoidea*. Paper No. 18 cont. Canad. Ent. xxxvi, pp. 5-9. [*Hymenoptera*.]
41. —. Classification of the Chalcid flies or the superfamily *Chalcidoidea*, with descriptions of new species in the Carnegie Museum collected in S. America by Herbert H. Smith. Publications of the Carnegie Museum; serial No. 21. Mem. Carnegie Mus. i, No. 4, pp. 225-551 + xxi, pls. xxxi-xxxix. [*Hymenoptera*.]
42. —. Descriptions of four new horn-tails. Canad. Ent. xxxvi, pp. 63, 64. [*Hymenoptera*.]
43. —. Three new Ichneumon flies from Russia. T. c. pp. 101, 102. [*Hymenoptera*.]
44. —. A new genus and some new species of *Hymenoptera* from the Philippine islands. T. c. pp. 281-285.
45. —. A *Hymenopterous* parasite of the Grape-berry moth, *Eudemis bortana* Schiff. T. c. p. 333.
Cf. SLINGERLAND, t. c. p. 344.
46. —. Descriptions of new *Hymenoptera* from Japan. I. J. N. York Ent. Soc. xii, pp. 65-83, pl. vii. II. T. c. pp. 146-165, pl. viii.
47. —. Descriptions of new genera and species of *Hymenoptera* from the Philippine Islands. P. U. S. Mus. xxviii, No. 1387, pp. 127-158.
48. —. A list of the *Hymenoptera* of the Philippine Islands, with descriptions of new species. J. N. York Ent. Soc. xii, pp. 1-22.
49. —. Remarks on honey bees. P. ent. Soc. Washington vi, pp. 120-123. [*Hymenoptera*.]
50. —. A new *Alysiid* from Ceylon. Ent. News. Philad. xv, p. 113. [*Hymenoptera*.]
51. —. Description of the type of the genus *Curriea* Ashm. T. c. p. 18. [*Hymenoptera*.]
52. —. A new *Torymid* from Utah. T. c. p. 302. [*Hymenoptera*.]
53. —. On the discovery of fig-insects in the Philippines. T. c. p. 342. [*Hymenoptera*.]
54. —. The *Homoptera* of Alaska. [in] Alaska viii, pp. 127-137.
55. —. *Hymenoptera* of Alaska. [in] Alaska ix, pp. 119-270, pls. ii-iv.
Reprint of memoir recorded in 1902.
56. AUEL, H. Messungen an *Lepidopteren*. Allg. Zeitschr. Ent. ix, pp. 452, 453.
57. AURIVILLIUS, C. Neue oder wenig bekannte *Coleoptera Longicornia*. Arkiv Zool. i, pp. 313-328.

58. [AURIVILLIUS, C.] *Cerambyciden* aus Bolivien und Argentina gesammelt von Freiherrn Erland Nordenskiöld. Ent. Tidskr. xxv, pp. 205–208. [*Coleoptera*.]
59. —. Svensk insektfauna. 13. Steklar. *Hymenoptera, Sphegidae*. T. c. pp. 241–300.
60. —. Beiträge zur Kenntnis der Insektenfauna von Kamerun. No. 11. *Lepidoptera, Heterocera* ii. Arkiv Zool. ii, No. 4, pp. 68, 1 pl.
61. —. Diagnosen neuer *Lepidopteren* aus Afrika. Ent. Tidskr. xxv, pp. 92–96.
62. —. New species of African *Striphnopterygidae*, *Notodontidae* and *Chrysopolomidae* in the British Museum. Tr. ent. Soc. London 1904, pp. 695–700, pl. xxxiii. [*Lepidoptera*.]
63. —. *Lepidoptera* of the Swedish Zoological expedition to Egypt and the White Nile. Jägerskiöld exp. No. 8, 9 pp.
64. —. Eine interessante neue *Papilio*-Art aus Afrika. Ins. Börse 1904, p. 363. [*Lepidoptera*.]
65. AUSTEN, E. E. A revised synopsis of the Tsetse-flies (Genus *Glossina* Wied.). Ann. Nat. Hist. xiv, pp. 151–155. [*Diptera*.]
66. —. Supplementary notes on the Tsetse-flies (Genus *Glossina* Wied.). Brit. Med. J. 1904, ii, pp. 658–662, 1 fig.; also Lancet 1904, ii, pp. 464, 465. [*Diptera*.]
Abstract by DE MEIJERE, Zool. Zentrbl. 1905, p. 146.
67. —. The house-fly and certain allied species as disseminators of enteric fever among troops in the field. J. R. Army med. Corps 1904, 16 pp., 1 pl.
68. AXELSON, W. M. Verzeichniss einiger bei Golaa, im südöstlichen Norwegen eingesammelten *Collembolen*. Ent. Tidskr. xxv, pp. 65–84.
- 68A. —. Beiträge zur Kenntniss der *Collembolen*-Fauna Sibiriens. Ofv. Finska Forh. xlv, No. 20, 13 pp., 1 pl.
69. BACHMETJEW, P. Zur Frage über die Parthenogenese der männlichen Exemplare des Schmetterlings *Epinephele jurtina* L. Horæ Soc. ent. Ross. xxxvii, pp. 1–16.
In Russian.
70. —. Der Unterschied der sogenannten "falschen" Drohnen von den gewöhnlichen, betrachtet vom Standpunkt der Analytisch-statistischen Methode aus. Ins. Börse 1904, pp. 363 etc. [*Hymenoptera*.]
71. —. Über die Veränderlichkeit der Anzahl der Augen bei *Epinephele jurtina* L. in Sophia. Allg. Zeitschr. Ent. ix, pp. 143–147. [*Lepidoptera*.]
72. —. Zur Variabilität der Flügelänge von *Aporia crataegi* L. in Sophia. T. c. pp. 269–271. [*Lepidoptera*.]
73. BACK, E. A. New species of North American *Asilidae*. Canad. Ent. xxxvi, pp. 289–293. [*Diptera*.]
74. BAECKMANN, J. *Anoplistes jacobsoni* sp. nov., aus Turkestan (*Coleoptera, Cerambycidae*). Rev. Russe Ent. 1904, pp. 311, 312.
75. BAGE, FREDA. Notes on phosphorescence in plants and animals. Victorian Natural. xxi, pp. 93–104.
76. BAKER, C. F. A revision of American *Siphonaptera*, or fleas, together with a complete list, and bibliography of the group. P. U. S. Mus. xxvii, No. 1361, pp. 365–469, pls. x–xxvi.

77. *BALBIANI, E.-G. Sur les conditions de sexualité chez les Pucerons. *Intermed. Biologistes* i, pp. 170-174.
Abstract by SCHRÖDER, *Allg. Zeitschr. Ent.* ix, p. 115.
- 77A. BALFOUR, A. First report of the Wellcome Research laboratories at the Gordon Memorial College, Khartoum. Khartoum, 1904, 8vo, pp. 83 + iii, 6 pls.
Chiefly on injurious Insects; includes 2 papers by THEOBALD, q. v. (1375, 1376).
78. BALLOU, H. A. Insects attacking cotton in the West Indies. *West Ind. Bull.* iv, pp. 268-286.
79. BALSAMO, F. Su i fenomeni di diffrazione di alcuni corpi organizzati in rapporto alle esperienze di Abbe. *Boll. Soc. Napoli* xvii, pp. 45-53, 1 pl.
80. *BANKS, CH. A preliminary Bulletin on insects of the Cacao, prepared especially for the benefit of farmers. Manille, 1903, 58 pp., 60 pls.
81. BANKS, N. New species of *Hemerobius*. *Canad. Ent.* xxxvi, pp. 61, 62. [*Neuroptera*.]
82. —. *Neuropteroid* insects from New Mexico. *Tr. Amer. ent. Soc.* xxx, pp. 97-110, pl. i.
83. —. *Neuropteroid* insects of the expedition. [in] *Alaska* viii, pp. 155-166, pls. xi, xii.
Reprint of paper recorded in 1900.
84. —. Two new species of *Hydroptilidæ*. *Ent. News Philad.* xv, p. 116. [*Trichoptera*.]
85. —. Two new species of Caddice-flies. *P. ent. Soc. Washington* vi, pp. 140-142. [*Trichoptera*.]
86. —. Notes on the structure of the thorax and maxillæ in insects. *T. c.* pp. 149-153.
87. —. A list of *Neuropteroid* insects, exclusive of *Odonata*, from the vicinity of Washington, D.C. *T. c.* pp. 201-217.
88. BARNES, W. New species of North American *Lepidoptera*. *Canad. Ent.* xxxvi, pp. 165-175, 197-204, 237-244, 264-268.
89. BARRETT, O. W. The brown ant in Orange gardens. *Bull. Dep. Agric. Jamaica* ii, pp. 204-206.
90. BARTEL, M. *Eriogaster philippi* n. sp. *Deutsche ent. Zeitschr. Iris* xvii, p. 10. [*Lepidoptera*.]
91. —. Drei neue palæarktische *Noctuiden*. *T. c.* pp. 158-163. [*Lepidoptera*.]
92. BATES, F. (the late). A revision of the subfamily *Pelidnotinæ* of *Coleopterous* family *Rutelidæ*, with descriptions of new genera and species. *Tr. ent. Soc. London* 1904, pp. 249-276.
Prepared for publication by Mr G. J. ARROW.
93. BAUER, V. Zur innern Metamorphose des Centralnervensystems der Insecten. *Zool. Jahrb. Anat.* xx, pp. 123-152, pl. viii.
Abstract by HEYMONS, *Zool. Zentrbl.* 1905, pp. 92-94.

94. BEARE, T. H. & DONISTHORPE, H. St J. K. Catalogue of British *Coleoptera*. London 1904, 51 pp.
Review by W. W. F., Ent. Mag. xl, p. 140.
95. BECKER, T. Die *Dipterengattung Peletoiphila* Hag. Zeitschr. Hym. Dipt. iv, pp. 129-133.
96. —. Die paläarktischen Formen der *Dipterengattung Lispa* Latr. Zeitschr. Ent. Breslau xxix, pp. 1-70.
97. BEDEL, L. Origine mœurs et synonymie d'un Curculionide aquatique *Stenopelmus rufinus* Gyll. (*Degorsia champenoisi* Bed.). Bull. Soc. ent. France 1904, pp. 23, 24. [*Coleoptera*.]
98. BEGUIN-BILLECOQ, L. Diagnoses sommaires d'espèces nouvelles d'*Apion* Herbst provenant de la région Malgache. Bull. Soc. ent. France 1904, pp. 54-57, 103, 104. [*Coleoptera*.]
- BELL, R. G. [See KELLOGG & BELL (782, 783).]
99. BEMIS, FLORENCE E. The *Aleyrodids*, or mealy-winged flies, of California, with references to other American species. P. U. S. Mus. xxvii, No. 1362, pp. 471-537, pls. xxvii-xxxvii.
100. BENNETT, C. B. Earwigs (*Anisolabia maritima* Bon.). Psyche xi, pp. 47-53, cuts. [*Orthoptera*.]
101. BENTON, F. The specific name of the common honey-bee. P. ent. Soc. Washington vi, pp. 71-73. [*Hymenoptera*.]
102. BERGROTH, E. Eine neue Art der Gattung *Glypsus* Dall. (*Hemiptera*, *Pentatomidae*). Rev. Russe Ent. iv, p. 32.
103. —. Super *Reduviidis* nonnullis Camerunensibus. Bol. Soc. espan. iv, pp. 357-362. [*Hemiptera*.]
104. —. Ueber die systematische Stellung der Gattung *Megadoeum* Karsch. Wien. ent. Zeit. xxiii, pp. 37-40. [*Hemiptera*.]
105. —. *Scutellerides* nouveaux. Ann. Soc. ent. Belgique xlviii, pp. 354-357. [*Hemiptera*.]
106. BERLESE, A. Sopra una nuova specie di Cocciniglia (*Mytilaspis ficifolia*) che attacca le foglie del fico. Atti Ist. Napoli (5) v, No. 12, 5 pp., pl. i. [*Coccidae*.]
107. BERNHAUER, M. Die Staphyliniden der paläarktischen Fauna. I. Tribus *Aleocharini* (II. Theil). Verh. Ges. Wien 1902, Beiheft, 198 pp.
The first part was published in the ordinary way [see Zool. Rec. 1091, INSECTA, BERNHAUER (93).] Part 2, being published as a special supplement, has been hitherto overlooked by the Recorder.
108. —. Neue exotische *Staphyliniden*. Stettin Ent. Zeit. lxxv, pp. 217-242. [*Coleoptera*.]
109. —. Neue exotische *Staphyliniden*. Verh. Ges. Wien liv, pp. 4-24. [*Coleoptera*.]
110. BERTHOUMIEU, V. Supplément aux *Ichneumoniens* d'Europe. Echange 1904, pp. 13-15. [*Hymenoptera*.]
111. —. *Hymenoptera* Fam. *Ichneumonidae*, subfam. *Ichneumoninae*, 87 pp., 2 pls.
Forms fasc. xviii of Wytsman Genera insectorum.
112. —. *Ichneumoniens* d'Espagne et des Canaries. Bull. Soc. ent. France 1904, pp. 270, 271. [*Hymenoptera*.]

113. [BERTHOUMIEU, V.] Un nuevo Iceneumónido de España. Bol. Soc. espan. iv, p. 161. [*Hymenoptera*.]
114. —. Revision de l'Entomologie dans l'antiquité. Rev. Sci. Bourbonnais xvii, pp. 167-172 etc.
115. BETHUNE, C. J. S. Bibliography of Canadian Entomology for the year 1902. Tr. R. Soc. Canada ix, Sect. 4, pp. 155-161.
116. BETHUNE-BAKER, G. T. New *Lepidoptera* from British New Guinea. Nov. Zool. xi, pp. 367-429, pls. iv-vi.
117. —. On new species of *Rhopalocera* from Sierra Leone. Ann. Nat. Hist. xiv, pp. 222-236.
118. —. On three new species of *Arhopala*. T. c. pp. 233-235. [*Lepidoptera*.]
119. BEUTENMÜLLER, W. The Insect-galls of the vicinity of New York City. Amer. Mus. J. iv, pp. 89-124, illustr.
120. —. The types of *Cynipidæ* in the collection of the American Museum of Natural History. Bull. Amer. Mus. xx, pp. 23-28. [*Hymenoptera*.]
121. —. Types of *Diptera* in the collection of the American Museum of Natural History. T. c. pp. 67-99.
122. —. Types of *Lepidoptera* in the collection of the American Museum of Natural History. T. c. pp. 81-86.
123. BEYER, G. Insects feeding in adobe walls. J. N. York Ent. Soc. xii, pp. 30, 31.
124. BEZZI, M. *Empididæ* novæ palæarcticæ ex Museo nationali hungarico. Ann. Mus. Hungar. ii, pp. 198-202. [*Diptera*.]
125. —. *Empididi* Indo-australiani raccolti dal Signor L. Biró. T. c. pp. 320-361. [*Diptera*.]
126. —. Intorno ai generi *Pelethophila* Hagenb. e *Chiromyia* Rob.-Desv. Atti Mus. Milano xliii, pp. 173-181. [*Diptera*.]
127. —. Verzeichniss der bis jetzt bekannten Arten der *Dipterengattung Drapetis* Meigen. Wien. ent. Zeit. xxiii, pp. 143-146.
128. —. Brevi notizie sui *Ditteroecidii* dell' America del Nord. Marcellia ii, pp. 141-147.
129. BIEDERMANN, W. Die Schillerfarben bei Insekten und Vögeln. Festchr. Haeckel [Denk. Ges. Jena xi], pp. 215-300.
130. BISCHOF, J. Beitrag zur Kenntniss der *Muscaria schizometopa*. Verh. Ges. Wien liv, pp. 79-101. [*Diptera*.]
131. BISSCHOPP VAN TUINEN, K. De zaagwerktuigen der *Cimbicini*. Tijdschr. Ent. xlvii, pp. 177-180, pls. xii, xiii. [*Hymenoptera*.]
132. BLACKBURN, T. Further notes on Australian *Coleoptera*, with descriptions of new genera and species. xxxiv. Tr. R. Soc. S. Austral. xxviii, pp. 281-297.
133. —. A revision of the Australian species of *Bolboceras*, with descriptions of new species. P. Linn. Soc. N. S. Wales xxix, pp. 481-526. [*Coleoptera*.]
134. —. Revision of the Australian *Aphodiides*, and descriptions of three new species allied to them. P. Soc. Victoria xvii, pp. 145-181. [*Coleoptera*.]

135. BLANCHARD, F. A new Californian species of *Dromæolus* Kies. Ent. News Philad. xv, p. 187. [*Coleoptera*.]
136. BLANCHARD, R. Sur un travail de M. le Dr Brumpt intitulé : quelques faits relatifs à la transmission de la maladie du sommeil par les mouches Tsétsé. Arch. parasit. viii, pp. 573-589. [*Diptera*.]
BLANDFORD, W. F. H. [See GODMAN (614).]
137. BLOOMFIELD, E. N. Three *Diptera* new to the British list. Ent. Mag. xl, pp. 60, 61.
138. BLUNNO, M. A sketch of the position of viticulture in Europe with respect to *Phylloxera*. Agric. Gaz. N. S. W. xv, pp. 250-256, 445-470.
139. BODE, W. Prof. A. Radcliffe Grote. Allg. Zeitschr. Ent. ix, pp. 1-6, Nachtrag, p. 349.
BOFILL Y PICHOT. [See ANTIGA & BOFILL (36).]
140. BOHN, G. Influence de l' inanition sur les métamorphoses. C.R. Soc. Biol. lvi, pp. 661-663.
141. BOILEAU, H. Description d'un *Dorcus* nouveau. Bull. Soc. ent. France 1904, pp. 27, 28. [*Coleoptera*.]
142. —. Description d'un *Dorcide* nouveau. T. c. p. 39. [*Coleoptera*.]
143. —. Description de *Coléoptères* nouveaux. Naturaliste 1904, pp. 277, 278, 284, 285.
144. BOLÍVAR, J. Notas sobre los Pirgomórfidos (*Pyrgomorphidae*). Bol. Soc. espan. iv, pp. 89-111. [*Orthoptera*.]
145. —. Notas sobre los Pirgomórfidos (*Pyrgomorphidae*). II. Subfam. *Sphenariinae*. III. *Tapesinae*. T. c. pp. 306-328. [*Orthoptera*.]
146. —. Notas sobre los Pirgomórfidos (*Pyrgomorphidae*). IV. *Taphro-notinae*. V. *Phymateinae*. T. c. pp. 393-418. [*Orthoptera*.]
147. —.VI. *Poecilocerinae*. VII. *Pyrgomorphinae*. T. c. pp. 432-459.
148. BORDAS, L. Sur les glandes annexes de l'appareil séricigène des larves de *Lépidoptères*. C.R. Ac. Sci. cxxxix, pp. 1036-1038.
149. —. L'appareil digestif des larves d'*Arctiidae* (*Spilosoma fuliginosa* L.). C.R. Soc. Biol. lvi, pp. 1099, 1100. [*Lepidoptera*.]
150. —. Anatomie et structure histologique du tube digestif de l'*Hydrophilus piceus* L. et de l'*Hydrous caraboides* L. T. c. pp. 1100-1102. [*Coleoptera*.]
151. —. Sur les glandes mandibulaires de quelques larves de *Lépidoptères*. Op. cit. lvii, pp. 474-476.
152. —. Anatomie des glandes salivaires de la nêpe cendrée (*Nepa cinerea* L.). T. c. pp. 667-669. [*Hemiptera*.]
153. BORELLI, A. Viaggio del Dr Enrico Festa nella Repubblica dell' Ecuador e regioni vicine. *Forficole*. Boll. Mus. Torino xix, No. 475, 6 pp.
154. —. Viaggio del Dr Alfredo Borelli nella Repubblica Argentina e nel Paraguay. *Forficole*. T. c. No. 479, 8 pp.
155. BORG, H. Beiträge zur Kenntniss der Insektenfauna von Kamerun. No. 10. *Blattodeen* aus Kamerun. Bih. Svenska Ak. xxviii, Afd. iv, No. 10, 36 pp., ii pls. [*Orthoptera*.]
Omitted in 1902.

156. [BORG, H.] *Forficuliden* aus Kamerun. Arkiv Zool. i, pp. 563-580, pl. xxvi. [*Orthoptera*.]
157. BÖRNER, C. Zur Systematik der *Hexapoden*. Zool. Anz. xxvii, pp. 511-533.
158. —. Zur Klärung der Beingliederung der *Ateloceraten*. T. c. pp. 226-243.
— [See also BREDDIN & BÖRNER (173).]
159. BOUCOMONT, A. Étude sur les *Enoplotrupes* et *Geotrupes* d'Asie. Rev. Ent. franc. 1904, pp. 209-252. [*Coleoptera*.]
160. BOURGEOIS, J. Voyage de M. Maurice Maindron dans l'Inde méridionale. *Dascillides* et *Malacodermes*. Ann. Soc. ent. France 1903, pp. 478-483. [*Coleoptera*.]
161. —. Rhipidocérider et Malacodermes recueillis par W. J. Burchell dans ses voyages en Afrique australe (1810-1815) et au Brésil 1825-1830; avec la description de quatre espèces nouvelles. Ann. Nat. Hist. xiii, pp. 89-102. [*Coleoptera*.]
162. BOUTAN, L. Le *Xylotrechus quadripes* et ses ravages sur les caféiers du Tonkin. C.R. Ac. Paris cxxxix, pp. 932-934. [*Coleoptera*.]
BOYÉ, —. [See LE DANTEC & BOYÉ (869).]
163. BOUVIER, E. L. Les Abeilles et les Fleurs. Rev. gen. Sci. xv, pp. 331-345, 9 figg.
164. BRADLEY, J. C. Two new species of *Cratichneumon*. Zeitschr. Hym. Dipt. iv, pp. 106, 107. [*Hymenoptera*.]
165. BREDDIN, G. Beiträge zur Systematik der *Rhynchoten*. SB. Ges. naturf. Berlin 1904, pp. 135-153.
166. —. Une nouvelle espèce du genre *Lycambes* Stål. Ann. Soc. ent. Belgique xlvi, p. 306. [*Hemiptera*.]
167. —. *Rhynchoten* aus Ameisen- und Termitenbauten. T. c. pp. 407-416.
168. —. Beschreibungen neuer indo-australischer *Pentatomiden*. Wien. ent. Zeit. xxiii, pp. 1-19. [*Hemiptera*.]
169. —. *Plisthenes buruensis*, eine neue malayische *Tesseratomine*. T. c. pp. 179-181. [*Hemiptera*.]
170. —. Noch einiges über *Colobasiastes* Bredd. T. c. pp. 245-250. [*Hemiptera*.]
171. —. Neue *Rhynchoten*-Ausbeute aus Südamerika. Soc. ent. xviii, pp. 147, 148, 153, 154, 177, 178 and xix, pp. 49, 50, 58.
172. —. Einige sudamerikanische *Cercopiden*. Soc. ent. xix, pp. 58, 59. [*Homoptera*.]
173. — & BÖRNER. Ueber *Thaumatoxena wasmanni*, den Vertreter einer neuen Unterordnung der *Rhynchoten*. SB. Ges. naturf. Berlin pp. 84-93.
Abstract by HANDLIRSCH, Zool. Zentrbl. 1904, p. 589.
— [See also WASMANN (1485).]
174. BREIT, J. Zwei neue Käferarten aus dem mitteleuropäischen Faunengebiet. München. Kol. Zeitschr. ii, pp. 28, 29. [*Coleoptera*.]

175. BRÈTHES, J. Insectos de Tucuman. An. Mus. Buenos Aires xi, pp. 329-347.
176. —. Contribución al estudio de los *Véspidos* sud-americanos y especialmente Argentinos. Op. cit. (3) ii, pp. 15-39. [*Hymenoptera*.]
177. —. Un nuevo *Meteorus* argentino. (*Hymenoptera*, *Braconidæ*). T. c. pp. 53-55.
178. —. Los *Euménidos* de las Repúblicas del Plata. T. c. pp. 231-320. [*Hymenoptera*.]
179. —. Un nuevo *Anthidium* de Patagonia. T. c. pp. 351-356.
180. —. *Trimeria buyssoni* un nuevo *Masárido* argentino. T. c. pp. 371-374. [*Hymenoptera*.]
181. —. Notes biologiques sur trois *Hyménoptères* de Buenos Aires. Revist. Mus. La Plata x, pp. 193-205, 1 pl.
182. —. El bicho moro. Estudio biológico sobre la *Epicauta adspersa* Klug, y medios de destruirla. Bol. Agricult. Rep. Argentina i, No. 14 (1901), pp. 20-31. [*Coleoptera*.]
183. BRITTON, W. E. Fourth report of the State Entomologist. Report of the Connecticut Agricultural experiment Station for the year 1904. Part III, pp. x, 199-310, xvii pls.
Includes a considerable section on mosquito control.
184. BROWN, T. Descriptions of new genera and species of New Zealand *Coleoptera*. Ann. Nat. Hist. xiv, pp. 41-59, 105-127.
185. —. Description of a new *Coleopterous* insect from Bounty Island. With note by J. J. WALKER. T. c. pp. 273, 274.
186. BROWNE, F. B. A bionomical investigation of the Norfolk Broads. Tr. Norfolk Soc. vii, pp. 661-673.
187. BRUES, C. T. Notes on *Trichobius* and the systematic position of the *Streblidæ*. Bull. Amer. Mus. xx, pp. 131-134. [*Diptera*.]
188. —. A new species of *Ecitopora*. Ent. News Philad. xv, p. 250. [*Coleoptera*.]
189. —. On the relation of certain Myrmecophiles to their host ants. Psyche xi, pp. 21, 22.
190. —. Some new species of parasitic *Hymenoptera*. Canad. Ent. xxxvi, pp. 117-119.
191. BRUMPT, E. Sur une nouvelle espèce de mouche Tsé-Tsé la *Glossina decorsei* n. sp., provenant de l'Afrique centrale. C.R. Soc. Biol. lvi, pp. 628-630. [*Diptera*.]
192. —. A propos de la *Glossina decorsei* Brumpt. Op. cit. lvii, pp. 430-432. [*Diptera*.]
- 192A. —. [Work on transmission of sleeping sickness, cf. BLANCHARD (136).]
193. BBUNELLI, G. Ricerche sull' ovario degli insetti sociali. Rend. Acc. Lincei xiii, 1, pp. 285 & 350-356.
194. —. La metamorfosi degli insetti et la filogenesi dei *Colcoteri*. Riv. ital. Sci. Nat. xxiv, pp. 77-83, etc.
195. BRUNER, L. Some new Colorado *Orthoptera*. Bull. Exp. Stat. Colorado 94, pp. 57-67.
— [See also GODMAN (614).]

196. BRUNTZ, L. Les reins labiaux des *Thysanoures*. Anatomie et physiologie. Arch. zool. exp. Notes 1904, pp. lxxxix-xcii.
197. BUENO, J. R. DE LA TORRE. A list of certain families of *Hemiptera* occurring within seventy miles of New York. J. N. York Ent. Soc. xii, pp. 251-253 and xiii, pp. 29-47. [*Heteroptera*.]
198. BUGNION, E. Les œufs pédiculés de *Rhyssa persuasoria*. Bull. Soc. ent. France 1904, pp. 80-83. [*Hymenoptera*.]
199. —. Les œufs pédiculés de *Rhyssa persuasoria*. Bull. Soc. Vaudoise xl, pp. 245-249, pl. xl. [*Hymenoptera*.]
200. BULL, L. Mécanisme du mouvement de l'aile des Insectes. C.R. Ac. Sci. cxxxviii, pp. 590-592.
BURKILL, I. H. [See WILLIS & BURKILL (1533).]
201. BURR, M. Observations on the *Dermatoptera*, including revisions of several genera, and descriptions of new genera and species. Tr. ent. Soc. London 1904, pp. 277-322.
202. —. Synopsis of the *Orthoptera* of Western Europe. Ent. Rec. xvi, pp. 10-12, etc. etc. (incomplete).
— [See also DISTANT (382), and FARREN and others (479).]
203. BUSCK, A. *Tineid* moths from British Columbia, with descriptions of new species. P. U. S. Mus. xxvii, No. 1375, pp. 745-778. [*Lepidoptera*.]
204. —. A new *Tineid* genus from Arizona. P. ent. Soc. Washington vi, pp. 123, 124. [*Lepidoptera*.]
205. —. A new species of *Ethmia* from the boreal region of Colorado. J. N. York Ent. Soc. xii, p. 44. [*Lepidoptera*.]
206. —. A case-bearer injurious to apple and plum in China (*Coleophora neviusiella*, new species). T. c. p. 45. [*Lepidoptera*.]
207. BUTLER, A. G. On certain African butterflies of the subfamily *Pierinae*. Ann. Nat. Hist. xiii, pp. 426-429.
208. —. The butterflies of the group *Callidryades* and their seasonal phases. Op. cit. xiv, pp. 410-414. [*Lepidoptera*.]
209. —. On seasonal phases in butterflies. P. Zool. Soc. London 1904, ii, pp. 142-144. [*Lepidoptera*.]
210. BUTLER, E. A. Two additional species of British *Hemiptera*. Ent. Mag. xl, p. 275.
211. BUTLER, HORTENSE. The labium of the *Odonata*. Tr. Amer. ent. Soc. xxx, pp. 111-134, pls. ii-vii.
212. BUTTEL-REEPEN, H. V. Über den gegenwärtigen stand der Kenntnisse von den geschlechtsbestimmenden Ursachen bei der Honigbiene (*Apis mellifica* L.) ein Beitrag zur Lehre von der geschlechtlichen Präformation. Verh. Deutsch. zool. Ges. 1904, pp. 48-77.
Followed by a discussion in which Dr BRESSLAU and others took part.
213. *—. Die Parthenogenesis bei der Honigbiene. Natur und Schule i, pp. 230-239.
Abstract, SCHRÖDER, Allg. Zeitschr. Ent. ix, p. 112.
214. BUYSSON, H. DU. *Élatérides* nouveaux et sous-genre nouveau. Bull. Soc. ent. France 1904, pp. 58-60. [*Coleoptera*.]

215. [BUYSSON, H. DU.] Notes sur quelques *Élatérides*. Rev. Ent. franc. xxiii, pp. 1-32. [*Coleoptera*.]
216. —. Description d'un *Agriotes* nouveau. T. c. p. 42. [*Coleoptera*.]
217. BUYSSON, R. DU. Contribution aux *Chrysidides* du Globe (5^e Série). Rev. Ent. franc. 1904, pp. 253-274. [*Hymenoptera*.]
218. —. Monographie des guêpes ou *Vespa* (suite). Ann. Soc. ent. France 1904, pp. 485-556 and 565-633, pls. v-x. [*Hymenoptera*.]
219. —. Espèces nouvelles d'*Hyménoptères*. Bull. Soc. ent. France 1904, pp. 144-146.
— [See also DE SAUSSURE, ANDRÉ & BUYSSON (1218).]
220. CALVERT, P. P. *Thaumatooneura* again. Ent. News Philad. xv, p. 216. [*Odonata*.]
221. CAMERON, M. Description of new species of *Diglossa* (*Diglotta*) from the island of Perim. Ent. Mag. xl, pp. 157, 158. [*Coleoptera*.]
222. CAMERON, P. On some *Hymenoptera* from the Raffles Museum, Singapore. J. Straits Asiat. Soc. xli, pp. 119-124.
223. —. Descriptions of three new species of *Hymenoptera* from Pearson, South Africa. Rec. Albany Mus. i, pp. 109-111.
224. —. Descriptions of new genera and species of *Hymenoptera* from Dunbrody, Cape Colony. T. c. pp. 125-160.
225. —. On the *Hymenoptera* of the Albany Museum, Grahamstown, South Africa. T. c. pp. 161-175.
226. —. Descriptions of new species of *Cryptinæ* from the Khasia hills, Assam. Tr. ent. Soc. London 1904, pp. 103-122. [*Hymenoptera*.]
227. —. A new species of *Bembex* from the Khasia hills, *Bembex khasiana* sp. n. T. c. p. 123.
228. —. Description of a new genus and of four new species of *Hymenoptera*. Tr. Amer. ent. Soc. xxx, pp. 93-96.
229. —. Descriptions of two new species of aculeate *Hymenoptera* from Japan. Entomologist 1904, pp. 34, 35.
230. —. On some new genera and species of *Hymenoptera*. T. c. pp. 109-111, 161, 162, 208-210, 259-262.
231. —. Descriptions of a new genus and some new species of East Indian *Hymenoptera*. T. c. pp. 306-309.
232. —. Descriptions of new species of aculeate and parasitic *Hymenoptera* from Northern India. Ann. Nat. Hist. xiii, pp. 211-233.
233. —. On some new species of *Hymenoptera* from Northern India. T. c. pp. 277-303.
234. —. Descriptions of new genera and species of *Hymenoptera* from India (continued). Zeitschr. Hym. Dipt. iv, pp. 5-15.
235. —. Description of a new species of *Juartinia* from Deesa, India, etc. T. c. pp. 89, 90. [*Hymenoptera*.]
236. —. Description of a new species of *Athalia* (*Tenthredinidæ*) from India. T. c. p. 108. [*Hymenoptera*.]
237. —. Description of a new genus of *Pimplina* from South Africa. T. c. pp. 143, 144. [*Hymenoptera*.]

238. [CAMERON, P.] Description of a new species of *Apteropompilus* from South Africa. T. c. p. 176. [*Hymenoptera*.]
239. —. Description of a new genus of *Ichneumonidae* from Africa. T. c. p. 190. [*Hymenoptera*.]
240. —. Description of a new species of *Pristaulacus* (*Evaniidae*) from Australia. T. c. p. 191. [*Hymenoptera*.]
241. —. Descriptions of new genera and species of *Ichneumonidae* from India. T. c. pp. 217–224, 337–346. [*Hymenoptera*.]
242. CANTIN, G. Sur la destruction de l'œuf d'hiver du *Phylloxera* par le lysol. C.R. Ac. Sci. cxxxviii, pp. 178, 179.
243. CARPENTER, G. H. *Collembola*. Fauna Hawaiensis iii, pp. 299–303, pl. ix. *
244. —. Injurious insects and other animals observed in Ireland during the year 1903. Econ. P. Dublin Soc. i, pp. 249–266.
245. — & EVANS, W. Some Spring-tails new to the British Fauna, with description of a new species. P. Phys. Soc. Edinb. xv, 1902/4, pp. 215–220, pl. iv. [*Aptera*.]
246. CARRET, A. Description d'un *Élatéride* nouveau appartenant à la faune européenne. Bull. Soc. ent. France 1904, p. 170. [*Coleoptera*.]
247. CARRIKER, M. A. *Mallophaga* from birds of Costa Rica, Central America. Stud. Univ. Nebraska iii (1903), pp. 123–197, pls. i–ix.
248. CASEY, T. L. On some new *Coleoptera*, including five new genera. Canad. Ent. xxxvi, pp. 312–324.
249. CASTLE, W. E. Sex determination in bees and ants. Science xix, pp. 389–392. [Cf. WHEELER (1516).]
250. CATOR, D. On new species of *Lycenidae* from Sierra Leone. Ann. Nat. Hist. xiii, pp. 73–76. [*Lepidoptera*.]
251. CAUDELL, A. N. Two *Orthoptera* hitherto unrecorded from the United States. P. U. S. Mus. xxvii, No. 1378, pp. 949–952.
252. —. Branched hairs of *Hymenoptera*. P. ent. Soc. Washington vi, pp. 5, 6.
253. —. An *Orthopterous* leaf-roller. T. c. pp. 46–49.
254. —. A new *Forficulid* from the Philippines. J. N. York Ent. Soc. xii, p. 108.
255. —. On a collection of non-saltatorial *Orthoptera* from Paraguay. T. c. pp. 179–188.
256. —. *Orthoptera* of the expedition. [in] Alaska viii, pp. 115–118.
A reprint of paper recorded in 1900.
— [See also DYAR & CAUDELL (441).]
- CECCHERELLI, G. [See COGGI & CECCHERELLI (296).]
- 256A. CESNOLA, A. P. DI. Preliminary note on the protective value of colour in *Mantis religiosa*. Biometrika iii, p. 58.
- 256B. CHAMPENOIS, A. Synopsis du genre *Glaphyrus* Latr. Abeille xxx, pp. 137–151. [*Coleoptera*.]
257. CHAMPION, G. C. *Catops sericatus* Chaud., a British insect. Ent. Mag. xl, p. 78. [*Coleoptera*.]

258. [CHAMPION, G. C.] An entomological excursion to Moncayo, N. Spain, with some remarks on the habits of *Xyleborus dispar* Fabr. by T. A. CHAPMAN, Tr. ent. Soc. London 1904, pp. 81-102, pls. xv, xvi. [*Coleoptera* and *Hemiptera*.]
 —. [See also GODMAN (614).]
259. CHAPMAN, T. A. Notes on *Heterogynis canalisensis* n. sp. Tr. ent. Soc. London 1904, pp. 71-79, pls. xi-xiv. [*Lepidoptera*.]
260. —. A note on *Lasiosoma hirta*. Ent. Mag. xl, pp. 103-107. [*Diptera*.]
 —. [See also CHAMPION (258).]
261. CHASTER, G. W. *Agathidium badium* Er.: a beetle new to Britain. Ent. Rec. xvi, p. 18. [*Coleoptera*.]
262. CHEVREL, R. Comparaison entre *Scopelodromus isemerinus* Chevrel et *Thalassomyia frauenfeldi* Schiner. Arch. zool. exp. Notes 1904, pp. xxix-xxxv. [*Diptera*.]
263. CHITTENDEN, F. H. On the species of *Sphenophorus* hitherto considered as *simplex* Leconte. P. ent. Soc. Washington vi, pp. 127-130. [*Coleoptera*.]
264. —. On the species of *Sphenophorus* hitherto considered as *placidus* Say. T. c. pp. 130-137. [*Coleoptera*.]
265. —. Biologic notes on species of *Languria*. J. N. York Ent. Soc. xii, pp. 27-30. [*Coleoptera*.]
266. —. A species of the *Tenebrionid* genus *Latheticus* in the United States. T. c. pp. 166, 167. [*Coleoptera*.]
267. —. The chestnut weevils, with notes on other nut-feeding species. Bull. U. S. Dep. Agric. Ent. xlv, pp. 24-38. [*Coleoptera*.]
 —. [See also WEBSTER (1498).]
268. CHOBAUT, A. Description d'un *Trechus* (*Anophthalmus*) nouveau des Pyrénées. Bull. Soc. ent. France 1904, p. 212. [*Coleoptera*.]
269. —. Description d'un *Rhipidius* nouveau de la France méridionale, avec tableau dichotomique des *Rhipidiini*. T. c. pp. 228-232. [*Coleoptera*.]
270. —. Description de deux espèces nouvelles de *Coléoptères* de l'Arabie. T. c. pp. 243, 244.
271. —. Description d'un *Coléoptère* cavernicole nouveau du midi de la France. Bull. Soc. Nimes xxxi, p. 76.
272. —. Exploration zoologique de la grotte de Tharaux (Gard). T. c. pp. 84-90.
273. CHOLODKOVSKY, N. Entomotischen Miscellen. [Nos. vii-ix.] Zool. Jahrb. Syst. xix, pp. 554-560.
274. —. Aphidologische Mitteilungen. 21. Über das Erlöschen der Migration bei einigen *Chermes*-Arten. Zool. Anz. xxvii, pp. 476-478. [*Aphidæ*.]
275. CHRÉTIEN, P. Description d'une nouvelle espèce de *Tephroclystia*. Bull. Soc. ent. France 1904, p. 133. [*Lepidoptera*.]
276. —. Les chenilles des Lins. Naturaliste 1904, pp. 151, 162-164. [*Lepidoptera*.]

277. CHRISTOPHERS, S. R. Second report of the anti-malarial operations at Mian Mir, 1901-1903. *Sci. Mem. India* (n. s.), No. 9, 37 pp.
For first report see JAMES (759).
278. CLARK, A. H. Notes on the insects of Barbados, St. Vincent, the Grenadines and Grenada. *Psyche* xi, pp. 114-117.
279. CLARKE, W. E. On insects observed at the Eddystone lighthouse in the autumn of 1901. *Ent. Mag.* xl, pp. 9, 10,
CLAVAREAU, H. [See JACOBY & CLAVAREAU (750).]
280. COCKERELL, T. D. A. Some parasitic bees. *Ann. Nat. Hist.* xiii, pp. 33-42. [*Hymenoptera*.]
281. —. Descriptions and records of bees. *Op. cit.* xiv, pp. 21-30. [*Hymenoptera*.]
282. —. New and little-known bees in the collection of the British Museum. *T. c.* pp. 203-208. [*Hymenoptera*.]
283. —. The Halictine bees of the Australian region. *T. c.* pp. 208-213. [*Hymenoptera*.]
284. —. Two new bees. *Ent. News Philad.* xv, pp. 32-34. [*Hymenoptera*.]
285. —. New genera of bees. *T. c.* p. 292. [*Hymenoptera*.]
286. —. Records of American bees. *Canad. Ent.* xxxvi, pp. 13, 14. [*Hymenoptera*.]
287. —. Three new *Cecidomyiid* flies. *T. c.* pp. 155, 156. [*Diptera*.]
288. —. Some notes on *Aphididae*. *T. c.* pp. 262, 263.
289. —. Some bees from San Miguel County, New Mexico. *Entomologist* 1904, pp. 5-9. [*Hymenoptera*.]
290. —. Note on the *Orthopterous* genus *Capnobotes*. *T. c.* pp. 179-181.
291. —. New records of bees. *T. c.* pp. 231-236. [*Hymenoptera*.]
292. —. The bees of the genus *Nomada* found in Colorado, with a table to separate all the species of the Rocky Mountains. *Bull. Colorado exp. Stat.* xciv, pp. 69-85. [*Hymenoptera*.]
293. —. The bees of Southern California. *Bull. S. Calif. Ac.* iii, pp. 3-6.
294. —. The Putnam Scale (*Aspidiotus ancyclus* Putnam). *P. Davenport Ac.* ix, pp. 61, 62. [*Coccidæ*.]
295. —. Table to separate the commoner Scales of the Orange. *Mem. Soc. Ant. Alzate* xiii, pp. 349-351. [*Coccidæ*.]
— [See also SCUDDER & COCKERELL (1267), VIERECK (1454), and VIERECK & COCKERELL (1455).]
296. COGGI, A. & CECCHERELLI, G. Note biologiche su alcune Zanzare del Senese. *Bull. Soc. ent. Ital.* xxxvi, pp. 49-57. [*Diptera*.]
297. COLLEDGE, W. R. Notes on the "Scots Gray" mosquito. *P. Soc. Queensland* xviii, pp. 67-80, pls. iii-vii. [*Diptera*.]
298. COLLIN, J. E. A list of the British *Cecidomyiidae* arranged according to the views of recent authors. *Ent. Mag.* xl, pp. 93-99. [*Diptera*.]
— [See also FARREN and others (479).]

299. COLLINGE, W. E. Report on the injurious insects and others animals observed in the Midland Counties during 1904. Birmingham, 1905, 8vo, 69 pp.
300. COLLINS, P. The protective resemblance of insects. Knowledge (n. s.) i, pp. 51-55.
301. —. Flower mimics and alluring resemblance. T. c. pp. 137-140.
302. —. Terrifying masks and warning liveries. T. c. pp. 208-211.
303. COMBES, E. Étude sur le mimétisme. Soc. Pyrenees-or. xlv, pp. 39-44.
304. *COMPERE, G. In search for parasites. J. Dep. Agric. W. Australia viii, pp. 132-145.
305. CONDORELLI, M. Caso di myiasis nell uomo per larva cuticolare di *Hypoderma bovis* (De Geer). Boll. Soc. zool. Ital. xiii, pp. 171-181. [*Diptera*.]
[CONKLIN, E. G. Zool. Rec. 1903, INSECTA (342) on amitosis. Abstract Zool. Zentrbl. 1905, p. 34.]
306. CONRADI, A. F. Variations in the protective value of the odoriferous secretions of some *Heteroptera*. Science xix, pp. 393, 394.
307. CONTE, A. La coloration naturelle des soies. C.R. Soc. Biol. lviii, pp. 54, 55.
308. COOK, M. T. Galls and insects producing them. Ohio Natural. iv, pp. 115-147.
309. COOK, O. F. Report on the habits of the Kelep or Guatemalan Cotton-boll-weevil ant. Bull. U. S. Dep. Agric. Ent. xlix, 16 pp. [*Hymenoptera*.]
310. —. An enemy of the cotton-boll-weevil. Science xix, pp. 862-864. Cf. WHEELER (1517).
311. —. Pupation of the Kelep ant. Science xx, pp. 310-312. [*Hymenoptera*.]
Cf. WHEELER (1517), and COOK again, p. 611 t. c.; WHEELER again, Science xx, pp. 766-768; cf. also SANDERSON, Science xx, p. 887.
312. COQUILLETT, D. W. A brief history of North American *Dipterology*. P. ent. Soc. Washington vi, pp. 53-58.
313. —. New *Diptera* from Central America. T. c. pp. 90-98.
314. —. New *Diptera* from India and Australia. T. c. pp. 137-140.
315. —. New North American *Diptera*. T. c. pp. 166-192.
316. —. Notes on *Culex nigrifolius*. Ent. News Philad. xv, pp. 73, 74. [*Diptera*.]
317. —. Several new *Diptera* from North America. Canad. Ent. xxxvi, pp. 10-12.
318. —. *Diptera* from Southern Texas with descriptions of new species. J. N. York Ent. Soc. xii, pp. 31-35.
319. —. A new *Ceratopogon* from Brazil. T. c. p. 35. [*Diptera*.]
320. —. *Diptera* of the expedition. [in] Alaska ix, pp. 2-78.
Reprint of memoir recorded in 1900.

321. CORTI, E. Alcuni *Ditteri* del Portogallo. Rend. Ist. Lombardo xxxvi, pp. 1068-1077.
322. CORTI, A. Zooecidii italici. Atti Mus. Milano xlii, pp. 337-381.
323. COWAN, T. W. The honey bee: its natural history, anatomy, and physiology. Second edition. London [1904] 12mo, xii+220 pp.
324. CRAMPTON, H. E. Experimental and statistical studies upon *Lepidoptera*. I. Variation and elimination in *Philosamia cynthia*. Biometrika iii, pp. 113-130.
325. —. Variation and selection in Saturnid Lepidoptera (*Philosamia cynthia*). Biol. Bull. vi, pp. 310, 311.
326. CRAWFORD, J. C. A new bee in the genus *Diphaglossa*. Canad. Ent. xxxvi, pp. 48-50. [*Hymenoptera*.]
327. —. Two new *Halictus* from New Jersey. Ent. News Philad. xv, pp. 97-99. [*Hymenoptera*.]
— [See also VIERECK (1454).]
328. CSIKI, E. *Pholeuon hungaricum*, barlangkakó új vak bogár Magyarországból. Ann. Mus. Hungar. ii, p. 565. [*Coleoptera*.]
329. —. *Coleoptera nova e Serbia*. T. c. pp. 591-593.
330. —. Magyarország *Cerambycidai*. Rov. Lapok xi, pp. 35 etc. [*Coleoptera*.]
331. —. Adatok Szerbia bogárfaunájához. T. c. pp. 147-149, 157-161. [*Coleoptera*.]
332. —. Új *Anophthalmus* Magyarországból. T. c. p. 170. [*Coleoptera*.]
333. CURRIE, R. P. An insect-collecting trip to British Columbia. P. ent. Soc. Washington vi, pp. 24-37.
334. —. Notes on some *Hemerobiidae* from Arizona and California. T. c. pp. 79-81. [*Neuroptera*.]
335. —. *Hemerobiidae* from the Kootenay district of British Columbia. T. c. pp. 81-89. [*Neuroptera*.]
336. —. *Odonata* of the expedition. [in] Alaska viii, pp. 145-153.
Reprint of the paper recorded in 1900.
337. CZERNY, P. L. *Agathomyia wankowiczii* Schnabl und *aurantiaca* Bezzi, nebst einer Übersicht der europ. *Agathomyia*-Arten. Wien. ent. Zeit. xxiii, pp. 137-139. [*Diptera*.]
338. —. *Cremifania nigrocellulata*, eine neue *Ochthiphiline*. Systematische Stellung und Gattungen-Diagnose der *Ochthiphilinen*. T. c. pp. 167-170. [*Diptera*.]
339. —. Revision der *Helomyziden*. 1 Teil. T. c. pp. 199-244, 263-285, pl. ii. [*Diptera*.]
340. CZERSKI, S. Die Entwicklung der Mitteldarmanlage bei *Meloë violaceus* Marsch. Arch. polon. ii, pp. 259-284, pl. viii.
341. DAIBER, MARIE. Beiträge zur Kenntnis der Ovarien von *Bacillus rossii* Fabr. nebst einigen biologischen Bemerkungen. Jena. Zeitschr. xxxix, pp. 177-202, pls. iii, iv. [*Phasmidae*.]
Abstract by FICK, Zool. Zentrbl. 1904, p. 795.
342. DALLA TORRE, K. W. von. *Hymenoptera*, fam. *Vespidæ*, 108 pp., 6 pls.
Forms fasc. 19 of Wytsmann's Genera insectorum.

343. DANIEL, J. Revision den paläarktischen *Crepidodera*-Arten. München. Kol. Zeitschr. ii, pp. 237-297. [*Coleoptera*.]
 —. [See also WEISE (1502).]
344. DANIEL, K. Ueber *Ophonus hospes* Strm. und seine Verwandten. München. Kol. Zeitschr. ii, pp. 1-15. [*Coleoptera*.]
345. —. Die *Cerambyciden*-Gattung *Mallosia* Muls. T. c. pp. 301-314. [*Coleoptera*.]
346. —. Das Prioritätsprincip in der naturwissenschaftlichen Nomenclatur und seine praktische Durchführung. T. c. pp. 320-349.
347. —. Ueber *Leptura revestita*, L., *verticalis* Germ. und ihre nächsten Verwandten. T. c. pp. 355-371. [*Coleoptera*.]
348. —. Ueber Literaturcitate. T. c. pp. 380-389.
 A much needed criticism of the Editor of L'Echange.
349. — & DANIEL, J. Neue paläarktische *Koleopteren*. T. c. pp. 76-93.
350. DANIEL, S. M. New California *Thysanoptera*. Ent. News Philad. xv, pp. 293-297.
351. DANNATT, W. Descriptions of three new butterflies. Entomologist 1904, pp. 173, 174, pl. vii. [*Lepidoptera*.]
352. DAVIS, W. T. Caterpillars attacked by *Histers*. J. N. York Ent. Soc. xii, pp. 88-90. [*Coleoptera*.]
353. —. A new beetle from New Jersey. Ent. News Philad. xv, p. 34, pl. vi. [*Coleoptera*.]
354. DAWYDOFF, C. Zur Morphologie der phagocytären Organe der Insecten. Protok. St. Peterb. Obshch. xxxv, 1904, pp. 277-286, 3 cuts. [*Orthoptera*.]
 In Russian; brief summary in German, p. 310.
355. —. Die phagozytären Organe der Insekten und deren morphologische Bedeutung. Biol. Centrbl. xxiv, pp. 431-440.
356. —. Note sur les organes phagocytaires de quelques Gryllons tropicaux. Zool. Anz. xxvii, pp. 589-593. [*Orthoptera*.]
357. —. L'appareil phagocytaire d'un *Locustide* de Java (*Cleandrus graniger* Serv.). T. c. pp. 707-710. [*Orthoptera*.]
358. DEGENER, P. Die Entwicklung des Darmcanals der Insecten während der Metamorphose. Zool. Jahrb. Anat. xx, pp. 499-676, pls. xxxiii-xliii.
359. — & SCHAPOSHNIKOW, C. Das Duftorgan von *Phassus schamyl*. Zeitschr. wiss. Zool. lxxviii, pp. 245-260, pl. xiv. [*Lepidoptera*.]
360. DEMAISON, C. Description d'une variété et d'une espèce nouvelles d'Asie mineure. Bull. Soc. ent. France 1904, pp. 206, 207. [*Coleoptera*.]
361. DESBROCHERS DES LOGES, J. *Curculionides* inédits d'Europe et circa. Frelon xii, pp. 53-64. [*Coleoptera*.]
362. —. Études sur les *Curculionides* de la faune européenne et des bassins de la Méditerranée, en Afrique et en Asie, suivies de tableaux synoptiques. T. c. pp. 65-104. [*Coleoptera*.]
 Relates to *Lixus* only as yet.
363. —. Diagnoses d'*Eusomus* nouveaux. T. c. p. 104. [*Coleoptera*.]

364. [DESBROCHERS DES LOGES, J.] *Curculionides* d'Europe et circa. T. c. pp. 105-109. [*Coleoptera*.]
365. —. Révision des *Curculionides* d'Europe et confins appartenant au genre *Eusomus*. T. c. pp. 119-132. [*Coleoptera*.]
366. —. Faunule des *Coléoptères* de la France et de la Corse. *Carabides* de la tribu des *Lebiidae* et des tribus voisines. T. c. pp. 133-196 and xiii, pp. 1-37.
367. —. Premier supplément à la monographie du genre *Thylacites*. Op. cit. xiii, pp. 37-40. [*Coleoptera*.]
368. DESNEUX, J. *Isoptera* Fam. *Termitidae*. 25^{me} fasc. Wytsman Gen. Ins., 52 pp., 2 pls.
369. —. Notes *termitologiques*. Ann. Soc. ent. Belgique xlviii, pp. 146-151.
370. —. A propos de la phylogénie des *Termitides*. T. c. pp. 278-286.
371. —. Remarques critiques sur la phylogénie et la division systématique des *Termitides*. (Réponse à M. Wasmann). T. c. pp. 372-378. Cf. WASMANN (1487).
372. —. Trois *Termites* nouveaux. T. c. pp. 286-288.
373. —. A new *Termite* from India. J. Bombay Soc. xv, p. 445.
DEVENTER, W. VAN. [See VAN DEVENTER (1428, 1429).]
374. DEVILLE, J. SAINTE-CLAIRE. Description d'un *Dyschirius* nouveau de France et d'Algérie. Bull. Soc. ent. France 1904, pp. 29, 30. [*Coleoptera*.]
375. —. Contributions à la faune française (*Coléoptères*). Abeille xxx, pp. 181-208.
376. DEWITZ, J. Die Farbe von *Lepidopterenkokons*. Zool. Anz. xxvii, pp. 617-621.
377. —. Zur Verwandlung der Insektenlarven. Zool. Anz. xxviii, pp. 166-182.
378. —. Künstliche Verfärbung bei Insekten. T. c. pp. 370-372.
379. DICKEL, O. Entwicklungsgeschichtliche Studien am Bienenel. Zeitschr. wiss. Zool. lxxvii, pp. 481-527, pls. xix, xx.
380. DIETZE, K. Beiträge zur Kenntnis der *Eupitheci*. Deutsche ent. Zeitschr. Iris xvi, pp. 331-387, pls. iii, iv, v.
381. DIMMOCK, G. & KNAB, F. Early stages of *Carabidae*. Bull. Springfield Mus. i, pp. 1-55, pls. i-iv. [*Coleoptera*.]
382. DISTANT, W. L. Insecta transvaaliensia. Parts v, vi, pp. 97-158, pls. ix-xv. [*Coleoptera*.]
GAHAN gives descriptions of new *Cerambycidae*, and BURR one new *Forficulid*.
383. —. The Fauna of British India, including Ceylon and Burma. *Rhynchota*, vol. ii, pt. 2, pp. 243-503.
384. —. Additions to a knowledge of the family *Cicadidae*. Tr. ent. Soc. London 1904, pp. 667-676, pls. xxix, xxx. [*Hemiptera*.]
385. —. New *Rhynchota-Cryptocerata*. Entomologist 1904, pp. 258, 259.

386. [DISTANT, W. L.] Undescribed *Rhynchota*. T. c. pp. 277, 278.
387. —. Rhynchotal notes. xx. Ann. Nat. Hist. xiii, pp. 103–114. xxi. T. c. pp. 194–206.
These two parts relate to *Capsidæ*.
388. —. Rhynchotal notes. xxii. *Heteroptera* from North Queensland. T. c. pp. 263–276.
389. —. An undescribed genus of *Coreidæ* from Borneo. T. c. pp. 303, 304. [*Hemiptera*.]
390. —. Rhynchotal notes. xxiii. *Heteroptera* from the Transvaal. T. c. pp. 349–356.
391. —. Rhynchotal notes. xxiv. Op. cit. xiv, pp. 61–66.
392. —. Rhynchotal notes. xxv. [*Anthocoridæ*.] T. c. pp. 219–222.
393. —. Rhynchotal notes. xxvi. T. c. pp. 293–303. xxvii. T. c. pp. 329–336. xxviii. T. c. pp. 425–430. [*Homoptera*.]
394. DITTRICH, R. Das Problem der Bienenzelle. Jahresber. Schlesisch. Ges. 1903, pp. 11, 12. Zool.-bot. Sect. [*Hymenoptera*.]
395. DODD, F. P. Notes on maternal instinct in *Rhynchota*. Tr. ent. Soc. London 1904, pp. 483–485, pl. xxviii.
396. DODERO, A. Description d'un nouveau *Pselaphide* aveugle de la France méridionale. Bull. Soc. ent. France 1904, pp. 40–42. [*Coleoptera*.]
397. —. Materiali per lo studio dei *Coleotteri* italiani con descrizioni di nuove specie. Ann. Mus. Genova xli, pp. 52–59.
398. DOGNIN, P. *Hétérocères* nouveaux de l'Amérique du Sud. Ann. Soc. ent. Belgique xlviii, pp. 115–134. [*Lepidoptera*.]
399. —. *Hétérocères* nouveaux de l'Amérique du Sud. T. c. pp. 358–369. [*Lepidoptera*.]
400. —. Description d'une nouvelle espèce d'*Hétérocère* de l'Amérique du Sud. Naturaliste 1904, p. 55.
401. —. Description d'une nouvelle espèce d'*Hétérocère* de l'Amérique du Sud. T. c. p. 67.
402. DONCASTER, L. On the early development of the unfertilised egg in the sawfly, *Nematus ribesii*. P. Cambridge Soc. xii, pp. 474–476.
— [See also RAYNOR & DONCASTER (1120).]
DONISTHORPE, H. St J. [See FARREN and others (479).]
403. DREYLING, L. Weitere Mitteilungen über die wachsbereitenden Organe der Honigbiene. Zool. Anz. xxvii, pp. 216–219. [*Hymenoptera*.]
404. —. Zur Kenntnis der Wachsabscheidung bei *Meliponen*. Op. cit. xxviii, pp. 204–210. [*Hymenoptera*.]
405. DRUCE, H. Descriptions of some new species of butterflies belonging to the family *Erycinidæ* from tropical South America. P. Zool. Soc. London 1904, i, pp. 481–489, pls. xxxiii, xxxiv. [*Lepidoptera*.]
406. —. Descriptions of some new species of *Lepidoptera Heterocera* from tropical South America. Ann. Nat. Hist. xiii, pp. 241–250.
407. DRUCE, H. H. Descriptions of new species of *Lycaenidæ* from Borneo and New Guinea. T. c. pp. 140–142. [*Lepidoptera*.]

408. [DRUCE, H. H.] Report on the *Lycaenidae*. Fasc. Malay. Zool. pt. 3, 13 pp. [*Lepidoptera*.]
409. DUBOIS, R. Sur la coloration naturelle des soies : réponse à M. Conte. C.R. Soc. Biol. lvii, pp. 201-203.
410. DUBUISSON, H. Dégénérescence des ovules. C.R. Soc. Biol. lvii, pp. 554, 555. [*Coleoptera*.]
411. DUCKE, A. Sobre as *Vespidas* sociaes do Pará. Bol. Mus. Goeldi iv, pp. 317-374, expl. [*Hymenoptera*.]
412. —. Revisione dei *Crisididi* dello stato brasiliano del Pará. Bull. Soc. ent. Ital. xxxvi, pp. 13-48. [*Hymenoptera*.]
413. —. Zur Kenntnis der *Sphegiden* Nordbrasilien. Zeitschr. Hym. Dipt. iv, pp. 91-98. Nachtrag. T. c. pp. 189, 190. [*Hymenoptera*.]
414. —. Zur Kenntnis der *Diploptera* vom Gebiete des unteren Amazonas. T. c. pp. 134-143. [*Hymenoptera*.]
415. —. Beitrag zur Kenntnis der Bienengattung *Centris* F. T. c. pp. 209-214. [*Hymenoptera*.]
416. DUDGEON, G. C. A catalogue of the *Heterocera* of Sikhim and Bhutan. With notes by H. J. Elwes and additions by Sir George Hampson. Part xvi. J. Bombay Soc. xv, pp. 602-613.
417. DUSMET y ALONSO, J. M. *Euménidos* de España, primer suplemento. Bol. Soc. espan. iv, pp. 126-137. [*Hymenoptera*.]
418. DUTTON, J. E. Report of the Malaria Expedition to the Gambia 1902 of the Liverpool School of Tropical Medicine and Medical Parasitology with an appendix by F. V. Theobald. Liverpool School of Tropical Medicine. Memoir x, pp. 1-46, 5 pls., included in Thompson Yates Lab. Rep. v, Part 1, and separate pagination.
419. —, TODD, J. L. & CHRISTY, C. The Congo Floor Maggot. Brit. Med. J. 1904, ii, pp. 664-666, 2 figg., also Lancet 1904, ii, p. 465.
420. DYAR, H. G. The *Lepidoptera* of the Kootenai district of British Columbia. P. U. S. Mus. xxvii, No. 1376, pp. 779-938.
421. —. The life history of *Culex cantans* Meigen. J. N. York Ent. Soc. xii, pp. 36-38, pl. i. [*Diptera*.]
422. —. New species of N. American *Lepidoptera* and a new *Limacodid* larva. T. c. pp. 39-44.
423. —. The life history of *Culex varipalpus* Coquillett. T. c. pp. 90-92, pl. iii. [*Diptera*.]
424. —. New *Lepidoptera* from the United States. T. c. pp. 105-108.
425. —. The larva of *Culex punctor* Kirby, with notes on an allied form. T. c. pp. 169-171, pl. ix. [*Diptera*.]
426. —. Brief notes on mosquito larvæ. T. c. pp. 172-174 & 243-246. [*Diptera*.]
427. —. Note on the distribution of the red forms of *Diacrisia*. P. ent. Soc. Washington vi, p. 18. [*Lepidoptera*.]
428. —. A *Lepidopteron* parasitic upon *Fulgoridæ* in Japan. T. c. p. 19.
429. —. Notes on the mosquitoes of British Columbia. T. c. pp. 37-41. [*Diptera*.]

430. [DYAR, H. G.] A new genus and species of *Tortricidæ*. T. c. p. 60. [*Lepidoptera*.]
431. —. Additions to the list of North American *Lepidoptera*, No. 1. T. c. pp. 62-65.
432. —. Additions to the list of North American *Lepidoptera*, No. 2. T. c. pp. 103-117.
433. —. Two new forms of *Oeneis* Huebner. T. c. p. 142. [*Lepidoptera*.]
434. —. Notes on synonymy and larvæ of *Pyralidæ*. T. c. pp. 158-160. [*Lepidoptera*.]
435. —. Descriptions of new forms of the genus *Illice* Walker. T. c. pp. 197-199. [*Lepidoptera*.]
436. —. A new *Phycitid* from the foothills. T. c. p. 221. [*Lepidoptera*.]
437. —. A new *Tortricid* from the sea shore. T. c. p. 221. [*Lepidoptera*.]
438. —. New North American species of *Scoparia* Haworth. Ent. News Philad. xv, pp. 71, 72. [*Lepidoptera*.]
439. —. New *Noctuidæ* from British Columbia. Canad. Ent. xxxvi, pp. 29-33. [*Lepidoptera*.]
440. —. *Lepidoptera* of the expedition. [in] Alaska viii, pp. 212-227. Reprint from memoir recorded in 1900.
441. — & CAUDELL, A. N. The types of genera. J. N. York Ent. Soc. xii, pp. 120-122.
442. — & KNAB, F. Diverse mosquito larvæ that produce similar adults. P. ent. Soc. Washington vi, pp. 143, 144. [*Diptera*.]
443. DYÉ, L. Sur la répartition des *Anophelinæ* à Madagascar. C.R. Soc. Biol. lvi, pp. 544, 545. [*Diptera*.]
444. —. Les parasites des *Culicidæ*. Arch. parasit. ix, pp. 5-77. [*Diptera*.]
445. EATON, A. E. New genera of European *Psychodidæ*. Ent. Mag. xl, pp. 55-59. [*Diptera*.]
446. ECKEL, L. The Resin Gnat and three Parasites. Biol. Bull. vi, pp. 325, 326. [*Diptera*.]
447. EHRLMAN, G. A. New forms of exotic *Papilionidæ*. Ent. News Philad. xv, pp. 214, 215. [*Lepidoptera*.]
448. ELLIOT, G. S. MCD. The Anglo-French Niger-Chad boundary Commission. Geographical Journal xxiv, pp. 505-523. [*Termitidæ*.]
449. ELWES, H. J. On some butterflies from Tibet. Deutsche ent. Zeitschr. Iris xvi, pp. 388-391.
Criticises FRUHSTORFER'S varieties and nomenclature.
450. EMBLETON, ALICE L. On the anatomy and development of *Comys infelix*: Embleton, a *Hymenopterous* parasite of *Lecanium hemisphaericum*. Tr. Linn. Soc. London (2) ix, pp. 231-254, pls. xi, xii.
451. —. *Coccidæ*, with notes on collecting and preserving. Knowledge (n. s.) i, pp. 224, 250, 278.

452. EMERY, C. Zur Kenntniss des Polymorphismus der Ameisen. Zool. Jahrb. Suppl. vii, pp. 587-610. [*Hymenoptera.*]
453. —. Le affinità del genere *Leptanilla* e i limiti delle *Dorylinae*. Arch. zool. ital. ii, pp. 107-116. [*Hymenoptera.*]
454. ENDERLEIN, G. *Nymphopsocus destructor* Enderl. 1903, ein neuer *Copeognathen*-Typus, zugleich ein neuer deutscher Wohnungs-Schädling. Zool. Jahrb. Syst. xix, pp. 727-732, pl. xliii.
455. —. Die von Herrn Prof. Dr Friedr. Dahl im Bismarck-Archipel gesammelten *Copeognathen*, nebst Bemerkungen über die physiologische Bedeutung des Stigmasackes. Zool. Jahrb. Syst. xx, pp. 105-112, pl. vii.
456. —. Die *Braconiden*-Gattung *Braunsia* Kriechb. T. c. pp. 429-452. [*Hymenoptera.*]
457. —. *Paniscomima*, eine neue von Herrn Baron von Erlanger aufgefundene *Rhopalosomiden*-Gattung. Zool. Anz. xxvii, p. 464. [*Hymenoptera.*]
458. —. *Homalothynnus*, eine neue *Thynniden*-Gattung. T. c. pp. 466-470. [*Hymenoptera.*]
459. —. Eine Methode, kleine getrocknete Insekten für mikroskopische Untersuchung vorzubereiten. T. c. p. 479.
460. —. Die Russelkäfer der Crozet-Inseln, nach dem Material der Deutschen Südpolar-Expedition. T. c. pp. 668-675. [*Coleoptera.*]
461. —. *Phthirocoris*, eine neue zu den *Henicocephaliden* gehörige *Rhynchotengattung* von den Crozet-Inseln und *Sphigmocephalus* nov. gen. T. c. pp. 783-788. [*Hemiptera.*]
462. —. *Lepidophthirus* nov. gen., eine Laus der Elefantenrobbe von der Kerguelen-Insel. Op. cit. xxviii, pp. 43-47. [*Anoplura.*]
463. —. Läuse-Studien. Über die Morphologie, Klassifikation und systematische Stellung der *Anopluren*, nebst Bemerkungen zur Systematik der Insekten-ordnungen. T. c. pp. 121-147.
464. —. Läuse-Studien, Nachtrag. T. c. pp. 220-223. [*Anoplura.*]
465. —. Neue afrikanische Arten der *Ichneumonidengattung* *Acronus* Tosq. 1896. T. c. pp. 65-69. [*Hymenoptera.*]
466. ENTZ, G. Az állatok színe és a mimicry. Termes. Kozl. Magyar Tars. xxxvi, pp. 201-206, 257-276, 417-441, 465-485, and Part II, T. c. pp. 189, 190.
467. ESCALERA, M. DE LA. Dos especies nuevas de *Buprestidos* paleárticos Bol. Soc. espan. iv, pp. 224-226. [*Coleoptera.*]
468. —. Don Serafin de Uhagon. Noticia necrológica (con un retrato). T. c. pp. 287-291.
469. ESCHERICH, K. Neue paläarktische *Meloiden* aus der F. Hauser'schen Sammlung. München. Kol. Zeitschr. ii, pp. 30-35. [*Coleoptera.*]
470. —. [A collection of abstracts on recent biological work on Ants.] Zool. Zentrbl. 1904, pp. 457-466. [*Hymenoptera.*]
- [See also WASMANN (1481).]
- EVANS, W. [See CARPENTER & EVANS (245).]
471. EVERTS, E. Tweede lijst van soorten en vareiteiten nieuw voorde Nederlandsche fauna, sedert de uitgave der *Coleoptera* Neerlandica bekend geworden. Tijdschr. Ent. xlvii, pp. 172-176.

472. EWING, H. Z. The functions of the nervous system, with special regard to respiration, in *Acrididæ*. Kansas Univ. Sci. Bull. ii, No. 11, pp. 305-319. [*Orthoptera*.]
473. FAIRMAIRE, L. Matériaux pour la faune *Coléoptérique* malgache. 18^e note. Ann. Soc. ent. Belgique xlviii, pp. 225-276.
474. —. Descriptions de *Lamellicornes* Indo-chinois nouveaux ou peu connus. Mission Pavie iii, pp. 86-90.
475. —. Deux espèces nouvelles de *Longicornes* du Toukin. T. c. pp. 145, 146. [*Coleoptera*.]
476. —. Descriptions de *Coléoptères* de la République-Argentine. Bull. Soc. ent. France 1904, pp. 61-64.
477. —. Description de *Cicindélides* et *Carabides* nouveaux de Madagascar. T. c. pp. 128-129. [*Coleoptera*.]
478. —. Descriptions de trois *Coléoptères* du Brésil. T. c. pp. 154, 155.
479. FARREN, W. and others. The Insects of Cambridgeshire, in Marr and Shipley, Nat. Hist. Cambridgeshire, pp. 139-183.
Orthoptera by BURR; *Neuroptera* by MORTON; *Coleoptera* by DONISTHORPE; *Diptera* by COLLIN; *Hymenoptera* by MORLEY.
480. FAUCONNET, L. & VITURAT. Catalogue analytique et raisonné des *Coléoptères* de Saône-et-Loire et des départements limitrophes. Suite. Bull. Soc. Autun xvi, pp. 115-308. [*Staphylinidæ-Scydmaenidæ*.]
481. FAUST, J. [the late]. Revision der Gruppe *Cléonides* vrais. Deutsche ent. Zeitschr. 1904, pp. 177-284. [*Coleoptera*.]
A catalogue by the author is added pp. 262-284, and an alphabetical Index by Dr HELLER, pp. 284-302.
482. FAUVEL, A. *Staphylinides* de l'Hindoustan et de la Birmanie. Rev. Ent. franc. xxiii, pp. 43-70. [*Coleoptera*.]
483. —. *Staphylinides* nouveaux du Sinaï et de la mer Rouge. T. c. pp. 71-74. [*Coleoptera*.]
484. —. *Geostiba* nouvelle d'Algérie. T. c. p. 75. [*Coleoptera*.]
485. —. *Staphylinides* exotiques nouveaux. 2^e Partie. T. c. pp. 76-112. [*Coleoptera*.]
486. —. Faune analytique des *Coléoptères* de la Nouvelle-Calédonie. 2^e Partie. T. c. pp. 113-208.
487. —. *Platyprosopus* nouveau d'Afrique. T. c. p. 275. [*Coleoptera*.]
488. —. *Staphylinides* myrmécophiles du Brésil. T. c. pp. 276-283, pl. i. [*Coleoptera*.]
489. —. Les *Staphylinides* du Thierwelt Deutsch-Ost-Afrika Notes et descriptions. T. c. pp. 284-294. [*Coleoptera*.]
490. —. *Staphylinides* de Nouvelle-Guinée recueillis par l'Expedition hollandaise. T. c. pp. 294-296. [*Coleoptera*.]
491. —. *Staphylinides* nouveaux de Madagascar. T. c. pp. 296-322. [*Coleoptera*.]
492. FAWCETT, J. M. On some new and little known butterflies, mainly from high elevations in the N. E. Himalayas. P. Zool. Soc. London 1904, ii, pp. 134-141, pl. ix. [*Lepidoptera*.]

493. FEDERLEY, H. Über *Spilosoma mendica* Ch. und var. *rustica* Hb., sowie über die vermutete Mimikry der ersteren. Allg. Zeitschr. Ent. ix, pp. 178–181. [*Lepidoptera*.]
494. FELSCH, C. & ORBIGNY, H. D'. *Coprophagen* der Ausbeute des Herrn Prof. Dr Yngve Sjöstedt. Arkiv Zool. i, pp. 399–409. [*Coleoptera*.]
495. FELT, E. P. Mosquitos or *Culicidæ* of New York State. Bull. N. York Mus. No. 79, pp. 241–400, 57 pls. [*Diptera*.]
Some of the tables have been prepared by D. B. YOUNG.
- 495A. —. Nineteenth Report of the State Entomologist on injurious and other Insects of the State of New York 1903. Bull. New York Mus. lxxvi, Entomology 21, pp. 91–235, pls. i–iv.
- 495B. — & JOUTEL, L. H. Monograph of the genus *Saperda*. Op. cit. lxxiv, Entomology 20, pp. 3–86, pls. i–xiv. [*Coleoptera*.]
Abstract by ESCHERICH, Zool. Zentrbl. 1905, p. 49.
496. — & YOUNG, D. B. Importance of isolated rearings from *Culicid* larvæ. Science xx, p. 312. [*Diptera*.]
497. FERNALD, C. H. A new genus and species of North American *Choreutinae*. Canad. Ent. xxxvi, pp. 130, 131. [*Lepidoptera*.]
498. FERRAUT, V. Beiträge zur Kenntniss der wahren Birngallmücke. Allg. Zeitschr. Ent. ix, pp. 298–304. [*Diptera*.]
499. FIELD, W. L. W. Problems in the genus *Basilarchia*. Psyche xi, pp. 1–7, pls. i–iii. [*Lepidoptera*.]
500. —. Notes on the pupation of *Vanessa antiopa*. Ent. News Philad. xv, pp. 6–9. [*Lepidoptera*.]
501. FIELDE, ADELE M. Three odd incidents in ant-life. P. Ac. Philad. 1904, pp. 639–641. [*Hymenoptera*.]
502. —. Effects of Light-rays on an ant (*Stenamma fulvum*). Biol. Bull. vi, p. 309.
503. —. On the artificial creation of mixed nests of ants. T. c. p. 326.
504. —. Observations on Ants in their relation to temperature and to submergence. Op. cit. vii, pp. 170–174.
505. —. Portable ant-nests. T. c. pp. 215–220, 3 figg.
506. —. Power of recognition among ants. T. c. pp. 227–250, 4 figg.
507. —. Tenacity of life in ants. T. c. pp. 300–309, 2 figg.
508. — & PARKER, G. H. The reactions of ants to material vibrations. P. Ac. Philad. 1904, pp. 642–649. [*Hymenoptera*.]
509. FIORI, A. Due nuove specie di *Malthodes* Kies. della Sicilia. Natural. Sicil. xvii, pp. 74–76. [*Coleoptera*.]
510. FLECK, E. Die *Coleopteren* Rumäniens. Bull. Soc. Bucarest xiii, pp. 308–346 (incomplete).
511. —. Meine Reisen durch die Dobrudscha 1899 u. 1903. Ent. Meddel. ii, pp. 266–282.
512. —. Die *Dipteren* Rumäniens. (Gesammelt von Dr Ed. Fleck, bestimmt von Dr P. Sack, Frankfurt a/M.) Bull. Soc. Bucarest xiii, pp. 92–116.
513. FLEISCHER, A. Biologisches über *Liodes*-Arten. Wien. ent. Zeit. xxiii, pp. 251–254. [*Coleoptera*.]

514. [FLEISCHER, A.] Tabulky k určování fauny palaearktické, obsahující z čeledi "Carabidae" oddíl "Scaritini." Všeobecné poznámky ku rodu "*Dyschirius*." Vestník. Klub. Prostejove ii (1900), pp. 25-56.
Entirely in Moravian.
515. FLETCHER, J. Descriptions of some new species and varieties of Canadian butterflies. Tr. R. Soc. Canada ix, Sect. 4, pp. 207-216, i pl. [*Lepidoptera*.]
516. —. Descriptions of some new species and varieties of Canadian butterflies. Canad. Ent. xxxvi, pp. 121-130. [*Lepidoptera*.]
517. FLETCHER, T. B. F. A preliminary list of the *Lepidoptera* of Malta. Entomologist 1904, pp. 273-276, 315-319.
518. FLEUTIAUX, E. Description d'un *Cardiophorus* nouveau de Madagascar. Bull. Soc. ent. France 1904, p. 12. [*Coleoptera*.]
519. FLÖGEL, J. H. L. Monographie der Johannisbeeren-Blattlaus, *Aphis ribus* L. Allg. Zeitschr. Ent. ix, pp. 321-333 & 375-381.
520. FLORENTIN, —. Préparations de larves de *Diptères* (*Homalomyia canicularis* L.) provenant d'un estomac humain. C.R. Soc. Biol. lvi, pp. 525, 526.
521. FLOYD, R. A contribution to the nervous cytology of *Periplaneta orientalis*, the common cockroach. Mark Anniv. Vol. pp. 339 etc., pls. xxv-xxviii.
522. FOLSOM, J. W. *Apterygota* of Alaska. [in] Alaska viii, pp. 83-104, pls. vi-x.
A reprint of the paper recorded in 1900, with the same pagination and plates.
523. FOREL, A. Ants and some other insects. An inquiry into the psychic powers of these animals with an appendix on the peculiarities of their olfactory sense. Translated from the German by Prof. William Morton Wheeler. Religion of Science Library, No. 56. Chicago, 1904, 8vo, 49 pp. [*Hymenoptera*.]
524. —. The psychical faculties of ants and some other insects. Rep. Smithson. Inst. 1903, pp. 587-599.
Translated from Congr. Zool. v.
525. —. Ueber Polymorphismus und Variation bei den Ameisen. Zool. Jahrb. Suppl. vii, pp. 571-586. [*Hymenoptera*.]
526. —. In und mit Pflanzen lebende Ameisen aus dem Amazonas-Gebiet und aus Peru gesammelt von Herrn E. Ule. Zool. Jahrb. Syst. xx, pp. 677-707. [*Hymenoptera*.]
527. —. Note sur les fourmis du Musée zoologique de l'Académie impériale des Sciences à St Pétersbourg. Annuaire Mus. St. Petersb. viii, pp. 368-388. [*Hymenoptera*.]
528. —. *Formiciden*. Hamburg Magalhaen. Reise vii, 7 pp. [*Hymenoptera*.]
529. —. Fourmis de British Columbia. Ann. Soc. ent. Belgique xlvi, pp. 152-155. [*Hymenoptera*.]
Includes a new *Carebara* from Africa.
530. —. Fourmis du Musée de Bruxelles. T. c. pp. 168-177. [*Hymenoptera*.]
531. —. Dimorphisme du male chez les fourmis et quelques autres notices myrmécologiques. T. c. pp. 421-425. [*Hymenoptera*.]

532. [FOREL, A.] *Miscellanea Myrmécologiques*. Rev. Suisse Zool. xii, pp. 1-52. [*Hymenoptera*.]
—, [See also WASMANN (1485).]
533. FORMÁNEK, R. Zur näheren Kenntniss der Gattungen *Barypithes* Duval und *Omius* Schönherr sensu Seidlitz. München. Kol. Zeitschr. ii, pp. 16-28 and 151-182. [*Coleoptera*.]
534. —, Ein neuer *Barypithes* und zwei neue *Omius*. T. c. pp. 297-300. [*Coleoptera*.]
535. —, Kůrovcí (*Scolytidae*) zemi Sudetských. Vestník. Klub, Prostějov iii, pp. 119-145. [*Coleoptera*.]
Entirely in Moravian.
536. FÖRSTER, F. *Odonata* von Hoch-Malakka und Sikkim. Ins. Börse 1904, pp. 355 etc.
537. FOSTER, F. H. Effects of defoliation by caterpillars on tree growth. Psyche xi, p. 36.
538. FOUNTAINE, MARGARET E. A "butterfly summer" in Asia Minor. Entomologist 1904, pp. 79-84, 105-108, 135-137, 157-159, 184-188. [*Lepidoptera*.]
FOWLER, W. W. [See GODMAN (614).]
539. FRANCOIS, P. Sur divers *Geotrupes* du sous-genre *Thorectes* Muls. Bull. Soc. ent. France 1904, pp. 64-66 and 139-143. [*Coleoptera*.]
540. FREDERICQ, L. La faune et la flore glaciaires de la Baraque-Michel (point culminant de l'Ardenne). Bull. Ac. Belgique 1904, pp. 1263-1326.
541. FRIESE, H. Eine metallisch gefärbte *Vespide*. Zeitschr. Hym. Dipt. iv, p. 16. [*Hymenoptera*.]
542. —, Zweiter Nachtrag zu den Bienengattungen *Caupolicana*, *Ptiloglossa* und *Oxaea*. T. c. pp. 17-20. [*Hymenoptera*.]
543. —, Neue Arten der Bienengattung *Ancyloscelis*. T. c. pp. 20-24. [*Hymenoptera*.]
544. —, Neue *Anthidium*-Arten aus der neotropischen Region. T. c. pp. 101-106. [*Hymenoptera*.]
The species are all African.
545. —, Beiträge zur Bienenfauna von Chile, Peru und Ecuador. T. c. pp. 180-188. [*Hymenoptera*.]
546. —, Neue afrikanische Bienen-Arten. T. c. pp. 296-302. [*Hymenoptera*.]
547. —, Ueber einige Bienen von Chile. T. c. pp. 303, 304. [*Hymenoptera*.]
548. —, Ueber *Megachile heteroptera* Sich. T. c. pp. 327-330. [*Hymenoptera*.]
549. —, Neue afrikanische *Megachile*-Arten. iii. T. c. pp. 330-336. [*Hymenoptera*.]
550. —, Nachtrag zur Monographie der Bienengattung *Centris*. Ann. Mus. Hungar. ii, pp. 90-92. [*Hymenoptera*.]
551. —, Die Kegelbienen Africas (Genus *Celioxys*). Arkiv Zool. ii, No. 6, 16 pp. [*Hymenoptera*.]

552. [FRIESE, H.] Über Hummelleben im arktischen Gebiete. Allg. Zeitschr. Ent. ix, pp. 409-414. [*Hymenoptera*.]
553. — & WAGNER, F. v. Ueber die Hummeln als Zeugen natürlicher Formenbildung. Zool. Jahrb. Suppl. vii, pp. 551-570, pls. xxix, xxx. [*Hymenoptera*.]
554. FRINGS, C. Bericht über meine Temperatur-Versuche in den Jahren 1903-4. Soc. ent. xix, pp. 137 etc. [*Lepidoptera*.]
555. *FRIONNET, M. C. Chenilles de *Macrolépidoptères* français. *Geometra*. Paris, 1904, 333 pp.
556. FROGGATT, W. W. Studies on Australian *Thysanoptera*: the genus *Idolothrips* Haliday. P. Linn. Soc. N. S. Wales xxix, pp. 54-57, pl. iii.
557. —. Notes on *Neuroptera* and descriptions of new species. T. c. pp. 71-76.
558. —. Locusts and grasshoppers. Part II. Agric. Gaz. N. S. W. xv, pp. 240-244, 1 pl. Part III, t. c. pp. 733-737, 1 pl. [*Orthoptera*.]
559. —. The army worm (*Leucania unipuncta* Haw.) in Australia. T. c. pp. 327-331.
560. —. The nut-grass *Coccid*. T. c. pp. 407-410, plate.
561. —. Some fern and orchid pests. T. c. pp. 514-518, 1 pl. [*Coleoptera*.]
Includes description of a new genus of weevil by LEA.
562. —. Experimental work with the peach *Aphis*.... Description of *Aphis*; parasites of the peach *Aphis*. T. c. pp. 603-612, 2 pls.
Several new parasites are described.
563. —. Report of the entomologist. T. c. pp. 1031-1034.
564. —. The sheep maggot fly, with notes on other common flies. T. c. pp. 1205-1211, 1 pl. [*Diptera*.]
— [See also GODING & FROGGATT (613).]
565. FRUHSTORFER, H. Neue Falter. Ins. Börse 1904, p. 157. [*Lepidoptera*.]
566. —. Neue indo-australische *Lepidopteren*. Deutsche ent. Zeitschr. Iris xvii, pp. 133-157.
567. —. Neue *Rhopaloceren* aus dem Malayischen Archipel. Ent. Meddel. ii, pp. 291-332.
568. —. Neue *Rhopaloceren* aus dem malayischen Gebiet. Berlin. ent. Zeitschr. xlix, pp. 165-169.
569. —. Beitrag zur Kenntnis der *Rhopaloceren*-fauna der Insel Engano. T. c. pp. 170-206.
570. —. Neue Indo-malayische *Rhopaloceren*. Soc. ent. xix, pp. 26-29.
571. —. Neue *Elymnias* aus Celebes und dessen Satellit-Inseln. T. c. p. 53. [*Lepidoptera*.]
572. FUCHS, F. *Lepidopterologisches*, darunter Beschreibung zweier neuer Arten und einiger aberrativen Falter. Jahrb. Nassau. Ver. pp. 29-44, pl. ii.
573. FUENTE, J. M. DE LA. Datos para la fauna de la provincia de Ciudad Real. Bol. Soc. espan. iv, pp. 381-390.

574. FYLES, T. W. *Torymus thomsoni* n. sp. Canad. Ent. xxxvi, p. 106. [*Hymenoptera*.]
575. —. A new Ichneumon. T. c. p. 207. [*Hymenoptera*.]
576. —. A new *Gelechiid*, *Trichotaphe levisella*, n. sp. T. c. p. 211. [*Lepidoptera*.]
577. GABRIEL, —. Ein Hilfsmittel bei Bestimmung der *Atomarien*. Zeitschr. Ent. Breslau xxix, pp. 85–89. [*Coleoptera*.]
578. GADEAU DE KERVILLE, H. Matériaux pour la faune des *Hyménoptères* de la Normandie. Quatrième note. Familles des *Chrysidés*, *Vespidés*, et *Eumenidés*. Bull. Soc. Rouen xxxix, pp. 40–47.
- GAHAN, C. J. [See DISTANT (382).]
579. GAL, J. Ponte du *Bombyx mori*. Bull. Soc. Nimes xxxi, pp. 37–43. [*Lepidoptera*.]
580. GANGLBAUER, L. Die Käfer von Mitteleuropa. Vierter Band, erste Hälfte. *Dermestidae*, *Byrrhidae*, *Nosodendridae*, *Georyssidae*, *Dryopidae*, *Heteroceridae*, *Hydrophilidae*. Wien, 1904, 8vo, 286 pp. [*Coleoptera*.]
581. —. Nova aus Judicarien. Munchen. Kol. Zeitschr. ii, pp. 186–200. [*Coleoptera*.]
582. —. Neue Arten aus den Gattungen *Trechus* (*anophthalmus*), *Hydroporus* und *Riolus*. T. c. pp. 350–354. [*Coleoptera*.]
583. —. Verzeichniss der auf der dalmatinischen Insel Meleda vorkommenden *Koleopteren* nach den Sammelergebnissen des Herrn Forstrates Alois Gobanz. Verh. Ges. Wien liv, pp. 645–660.
- [See also HOLDHAUS (695).]
584. GARBOWSKI, T. Parthenogenese bei *Porthesia*. Zool. Anz. xxvii, pp. 212–214. [*Lepidoptera*.]
585. GARCIA MERCET, R. Especies nuevas de Crisididos. Bol. Soc. espan. iv, pp. 83–89. [*Hymenoptera*.]
586. —. Especies españolas del género *Hedychridium*. T. c. pp. 144–152. [*Hymenoptera*.]
587. —. Las *Bembex* de España. T. c. pp. 341–356. [*Hymenoptera*.]
588. —. Un Nisonino nuevo de España. T. c. p. 392. [*Hymenoptera*.]
589. GEBIEN, H. Verzeichnis der von Professor Dr Yngve Sjöstedt in Kamerun gesammelten *Tenebrioniden*. Arkiv Zool. ii, No. 5, 31 pp., 2 pls. [*Coleoptera*.]
590. —. Revision der *Pyncocerini* Lac. (*Coleoptera Heteromera*). Deutsche ent. Zeitschr. 1904, pp. 101–176 & 305–356.
591. GERHARDT, J. Eine verkannte deutsche Käferart [*Isomina* n. sp.]. Zeitschr. Ent. Breslau xxix, p. 79. [*Coleoptera*.]
592. —. Eine neue deutsche Käfer-Art. Deutsche ent. Zeitschr. 1904, p. 366. [*Coleoptera*.]
593. GESSARD, C. Sur la tyrosinase de la mouche dorée. C.R. Ac. Sci. cxxxix, pp. 644, 645. [*Diptera*.]
594. GESTRO, R. Leonardo Fea ed i suoi viaggi. Ann. Mus. Genova xli, pp. 95–152 [portrait, bibliography, list of discoveries].
595. —. Materiali per lo studio delle *Hispidae*. xxi–xxiii. T. c. pp. 455–465. [*Coleoptera*.]

596. [GESTRO, R.] Materiali... xxiv. T. c. pp. 515-524. [*Coleoptera*.]
597. GIARD, A. Sur la ponte du *Pseudophleus falleni* Schilling. Feuille Natural. xxxiv, p. 107. [*Hemiptera*.]
598. —. Sur quelques *Diptères* intéressants du jardin du Luxembourg à Paris. Bull. Soc. ent. France 1904, pp. 86-88.
599. —. Sur l'*Agromyza simplex* H. L. parasite de l'Asperge. T. c. pp. 179-181. [*Diptera*, *Hymenoptera*.]
— [See also GOURY & GUIGNON (617).]
600. *GIARDINA, A. Sull' esistenza di una zona plasmatica perinucleare nel oocite. Publ. Lab. Zool. Palermo 1904.
Quoted by MOLLISON (955).
601. GILES, G. M. Cold weather mosquito notes from the United provinces, North-west India. J. trop. Medicine vii, pp. 1, 22, 49. [*Diptera*.]
602. —. Cold weather mosquito notes from India.—Malaria in Umritzar and its causes. T. c. pp. 83, 104, 120, 133, 149. [*Diptera*.]
603. —. Notes on some collections of mosquitoes etc., received from the Philippine Islands and Angola. T. c. pp. 365-369. [*Diptera*.]
604. —. Notes on some collections of mosquitoes received from abroad. T. c. pp. 381-384. [*Diptera*.]
605. GILLETTE, C. P. Report of the Entomologist. Some of the more important insects of 1903. Bull. Exp. Stat. Colorado 94, pp. 1-15, 2 pls.
606. —. Annotated list of Colorado *Orthoptera*. T. c. pp. 17-56.
607. —. Copulation and ovulation in *Anabrus simplex* Hald. Ent. News Philad. xv, pp. 321-324, pl. xix. [*Orthoptera*.]
608. GILLMER, M. Ein gynandromorphes Exemplar von dem Hybriden *Smerinthus hybridus* Stephens (1850). Allg. Zeitschr. Ent. ix, pp. 140-143. [*Lepidoptera*.]
609. GIRAULT, A. A. Standards of the number of eggs laid by Insects. II. Ent. News Philad. xv, pp. 2, 3.
610. —. *Attelabus bipustulatus* Fab. Theory of oviposition and construction of nidus; miscellaneous notes. T. c. pp. 189-193. [*Coleoptera*.]
611. —. *Anasa tristis* De G.; history of confined adults; another egg parasite. T. c. pp. 335-337. [*Hemiptera*.]
612. —. Miscellaneous notes on *Aphrophora parallela* Say. Canad. Ent. xxxvi, pp. 44-48. [*Homoptera*.]
613. GODING, F. W. & FROGGATT, W. W. Monograph of the Australian *Cicadidæ*. P. Linn. Soc. N. S. Wales xxix, pp. 561-669, pls. xviii, xix. [*Homoptera*.]
614. GODMAN, F. D. Biologia centrali-americana, Parts clxxxi-clxxxv. The entomological contents are as follows:—
Coleoptera, Vol. iv, part 4, pp. 313-440, pls. xvii-xxi: *Curculionidæ* by G. C. CHAMPION.
Coleoptera, Vol. iv, part 6, pp. 225-280, pl. viii: *Scolytidæ* by W. F. H. BLANDFORD.
Rhynchota Homoptera, Vol. i, pp. 77-124, pls. ix-xii: *Fulgoridæ* by W. W. FOWLER.
Orthoptera, Vol. ii, pp. 33-104, pl. i: *Acridiidæ* by L. BRUNER.

615. GOELDI, E. A. Os mosquitos no Pará. Resumo provisorio dos resultados da campanha de experiencias executadas em 1903, especialmente em relação ás especies *Stegomyia fasciata* e *Culex fatigans* sob o ponto de vista sanitario. Bol. Mus. Goeldi iv, pp. 129-197. [*Diptera*.]
616. —. Grandiosas migrações de borboletas no valle amazonica. T. c. pp. 309-316, 2 pls. [*Lepidoptera*.]
617. GOURY, G. & GUIGNON, J. Les insectes parasites des Ranunculacées. Feuille Natural. xxxiv, pp. 88-91, 112-118, 134-142.
Cf. GIARD, pp. 127, 128, for supplement: also PORTEVIN, p. 187, and FRIONNET, pp. 188, 236, t.c.
618. — & —. Les insectes parasites des Berbéridées. T. c. pp. 238-243, 253-255.
Supplement, FRIONNET, t. c. pp. 12, 13.
619. GRAENICHER, S. Wisconsin bees: Genus *Andrena*. Ent. News Philad. xv, pp. 64-67. [*Hymenoptera*.]
620. GREEN, E. E. The *Coccidæ* of Ceylon. Part III, pp. 171-249, pls. lxi-xciii. London, 1904.
621. —. Notes on some Ceylon butterflies. Spolia Zeylan. ii, pp. 75-77, 1 pl. [*Lepidoptera*.]
622. —. On some Javanese *Coccidæ*: with descriptions of new species. Ent. Mag. xl, pp. 204-210.
623. —. On some *Coccidæ* in the collection of the British Museum. Ann. Nat. Hist. xiv, pp. 373-377.
624. —. Descriptions of some new Victorian *Coccidæ*. Victorian Natural. xxi, pp. 65-71.
625. —. Notes on Australian *Coccidæ* ex coll. W. W. Froggatt, with descriptions of new species. No. 1. P. Linn. Soc. N. S. Wales xxix, pp. 462-465, pls. xvi, xvii.
626. —. The lac industry in Ceylon. Ann. Bot. Gardens Peraden. i, Suppl. pp. 33-38.
627. —. Report for 1903 of the Government entomologist. Agric. J. Bot. Gardens Ceylon ii, pp. 235-261.
628. GREEN, J. F. Protective colouring. Tr. West Kent Soc. 1903/1904, pp. 35-45.
629. GRIEF, B. *Lepidopterologische Wandlungen in lokaler Hinsicht*. Helios xxi, pp. 89-129, 1 pl.
630. GRIFFINI, A. Gli uccelli insettivori non sono utili all' agricoltura. Siena, 1904, 8vo, 83 pp.
631. GRIMSHAW, P. H. *Diptera scotica*. III. The Forth district. Ann. Scott. Nat. Hist. 1904, pp. 26-33, 98-102.
632. —. On a new British fly (*Hydrotæa pilipes* Stein) from the Forth district. T. c. pp. 158-160. [*Diptera*.]
633. —. On some new and rare Scottish *Diptera*. T. c. pp. 221-223.
634. GRINNELL, F. A new *Thanaos* from Southern California. Ent. News Philad. xv, p. 114. [*Lepidoptera*.]
635. GROSS, J. Die Spermatogenese von *Syromastes marginatus* L. Zool. Jahrb. Anat. pp. 439-498, pls. xxxi, xxxii. [*Hemiptera*.]

636. [GROSS, J.] Ein Beitrag zur Spermatogenese der *Hemipteren*. Verh. Deutsch. zool. Ges. 1904, pp. 180-190.
637. GROSSBECK, J. A. Description of a new *Culex*. Canad. Ent. xxxvi, p. 332. [*Diptera*.]
638. —. Description of two new species of *Culex*. Ent. News Philad. xv, pp. 332, 333. [*Diptera*.]
[GROTE, A. RADCLIFFE. Obituary, see BODE (139).]
639. GROUVELLE, A. Descriptions de *Clavicornes* nouveaux du Musée de Bruxelles. Ann. Soc. ent. Belgique xlviii, pp. 181-185. [*Coleoptera*.]
640. —. *Hétérocerides*. Mission Pavie iii, p. 83.
641. GRÜNBERG, K. Eine neue *Æstriden*larve (*Rhinoestrus hippopotami* nov. spec.) aus der Stirnhöhle des Nilpferdes. SB. Ges. naturf. Berlin 1904, pp. 35-39, 1 pl. [*Diptera*.]
642. —. H. v. Ihering, Biologie der stachellosen Honigbienen Braziliens. Biol. Centrbl. xxiv, pp. 7-18. [*Hymenoptera*.]
Abstract of Ihering's last year's paper.
643. GRUVEL, A. Contribution à la histologie des muscles. Pr.-verb. Soc. Sci. Bordeaux 1896-97, pp. 70-75.
644. *GUÉNAUX, N. Entomologie et parasitologie agricoles. Paris, 1904, 8vo, 580 pp., 390 figg.
Noticed Science xx, p. 155.
645. GUÉRIN, J. & PÉNEAU, J. *Hémiptères*. Faune entomologique armoricaine. Bull. Soc. sci. med. Ouest France xiii, Appendix pp. xi-xvi, etc. etc.
Separate pagination for each family: this parts extends to *Berytidae*.
GUIGNON, J. [See GOURY & GUIGNON (617, 618).]
646. GUILLIAUME, A. Matériaux pour un catalogue des *Trypetidae* de la Belgique. Ann. Soc. ent. Belgique xlviii, pp. 426-431. [*Diptera*.]
GUPPY, J. [See KAYE (775).]
647. HAGEDORN, M. Revision unserer Pappelborkenkäfer. Munchen. Kol. Zeitschr. ii, pp. 228-233. Nachtrag, pp. 372, 373. [*Coleoptera*.]
648. —. Enumeratio *Scolytidarum* e Sikkim et Japan natarum Musei historico-naturalis Parisiorum quas Dominus J. Harmand annis 1890 et 1901 collegit descriptionibus specierum novarum adjectis. Bull. Mus. Paris 1904, pp. 122-126. [*Coleoptera*.]
649. —. Ein neuer *Scolytoplatypus* des Hamburger Museums und Bemerkungen über diese von C. Schaufuss aufgestellte Gattung. Stettin Ent. Zeit. lxxv, pp. 404-413. [*Coleoptera*.]
650. —. Ein neuer *Scolytoplatypus* aus Java. Ins. Börse 1904, p. 260. [*Coleoptera*.]
651. —. Steinnussbohrer. Allg. Zeitschr. Ent. ix, pp. 447-452. [*Coleoptera*.]
652. HALLER, B. Über den allgemeinen Bauplan des Tracheaten *Syncerebrums*. Arch. mikr. Anat. lxxv, pp. 181-279, pls. xii-xvii.
653. HAMPSON, Sir G. F. The *Lepidoptera-Phalanae* of the Bahamas. Ann. Nat. Hist. xiv, pp. 165-188.

654. [HAMPTON, Sir G. F.] The moths of India. Supplementary paper to the Volumes in "The Fauna of British India." Series III, part 1. J. Bombay Soc. xv, pp. 630-653. Part 2. Op. cit. xvi, pp. 132-151, pl. D. [*Lepidoptera*.]
655. HANCOCK, J. L. The *Tettigidae* of Ceylon. Spolia Zeylan. ii, pp. 97-157, 3 pls. & map. [*Orthoptera*.]
656. —. The oviposition and carnivorous habits of the green meadow-grasshopper (*Orchelimum glaberrimum* Burm.). Psyche xi, pp. 69-71, pl. v. [*Orthoptera*.]
657. HANDLIRSCH, A. Zur Systematik der *Hexapoden*. Zool. Anz. xxvii, pp. 733-759.
658. —. Über Konvergenzerscheinungen bei Insekten und über das Protentomon. Verh. Ges. Wien liv, pp. 134-142.
Abstract by HEYMONS, Zool. Zentrbl. 1904, p. 97.
659. —. Über die Insekten der Vorwelt und ihrer Beziehungen zu den Pflanzen. T. c. pp. 114-119.
Abstract by HEYMONS, Zool. Zentrbl. 1905, p. 98.
660. —. Les insectes houillers de la Belgique. Mem. Mus. Belgique iii, pp. 1-20, pls. i-vii.
661. —. Über einige Insektenreste aus der Permformation Russlands. Mem. Ac. St. Petersb. (8) xvi, No. 5, 8 pp., 1 pl.
662. —. Bemerkungen zu der Arbeit des Herrn Prof. Dr Heymons über die Abdominalanhänge der *Libellen*. Ann. Hofmus. Wien xix, pp. 59-63. [*Odonata*.]
Relates to HEYMONS (683).
663. HARTMANN, F. Neue Rüsselkäfer aus Ostafrika. Deutsche ent. Zeitschr. 1904, p. 369. [*Coleoptera*.]
664. HAUSER, G. Neue Cetonien-Arten aus Afrika und eine neue *Valgus*-Art aus Neu-Guinea. Deutsche ent. Zeitschr. 1904, pp. 33-41. [*Coleoptera*.]
665. —. Eine neue *Nemophas*-Art. T. c. p. 42. [*Coleoptera*.]
666. HAVERHORST, P. Over het Kopvocht bij vlinders die zich ontpoppen. Tijdschr. Ent. xlvii, pp. 168-171. [*Lepidoptera*.]
667. HAVERKAMPF, F. Note sur quelques aberrations intéressantes de *Lépidoptères* belges. Ann. Soc. ent. Belgique xlviii, pp. 186-188, pl. i.
668. HEATH, E. A. Descriptions of two new *Cetoniid* Beetles from British East Africa. Entomologist 1904, pp. 101, 102. [*Coleoptera*.]
669. HEATH, R. H. Sand-grouse and Locusts. J. Bombay Soc. xv, pp. 522, 523. [*Orthoptera*.]
HEBARD, M. [See REHN & HEBARD (1134).]
670. HEIDEMANN, O. Notes on North American *Aradidae*, with descriptions of two new species. P. ent. Soc. Washington vi, pp. 161-165. [*Hemiptera*.]
671. —. Notes on a few *Aradidae* occurring north of the Mexican boundary. T. c. pp. 229-233. [*Hemiptera*.]
672. —. *Heteroptera* of the expedition. [in] Alaska viii, pp. 139-144.
Reprint of the paper recorded in 1900; with some corrigenda, p. 140.

673. HELLER, H. M. Brasilianische Käferlarven gesammelt von Dr Fr. Ohaus. Stettin Ent. Zeit. lxx, pp. 381-401, pls. iv, v. [*Coleoptera*.]
674. —. Beiträge zur Kenntnis der Insektenfauna von Kamerun. No. 27. Rüsselkäfer aus Kamerun gesammelt von Prof. Dr Yngve Sjöstedt. Ent. Tidskr. xxv, pp. 161-201. [*Coleoptera*.]
675. —. Fünf neue *Zygopiden*. Ann. Soc. ent. Belgique xlviii, pp. 290-295. [*Coleoptera*.]
— [See also FAUST (481).]
676. HENNEGUY, L. F. Les Insectes. Morphologie. Reproduction. Embryogénie. Paris, 1904, 8vo, xviii + 804 pp., 4 pls., 622 illustt.
677. HERRERA, A. L. Procédé pour multiplier l'ennemi du *Anthonomus grandis* du coton. Mem. Soc. Ant. Alzate xix, pp. 327-331.
678. HERRMANN, E. Schmetterlings-Fauna von Frankfurt a. O. Eine Zusammenstellung der in und um Frankfurt a. O. vorkommenden Grossschmetterlinge. Helios xxi, pp. 130-169. [*Lepidoptera*.]
679. HERZ, O. Beitrag zur Kenntniss der *Lepidopteren*-Fauna des russischen Nordens. Annuaire Mus. St. Petersb. ix, pp. 260-262.
680. —. *Lepidoptera* von Korea. *Noctuidæ et Geometridæ*. T. c. pp. 263-390, pl. i.
Continuation of Fixsen's 1887 paper.
- 680A. —. *Lepidopteren* Ausbeute der Lena-Expedition von B. Poppius im Jahre 1901. Ofv. Finska Forh. xlv, No. 15, 22 pp., 1 pl.
681. HEYDEN, L. VON. Bestand der von Heyden'schen *Coleopteren*-Sammlung Januar 1903 an Arten (ausschliesslich Rassen und Varietäten) aus der palaearctischen Region. Deutsche ent. Zeitschr. 1904, pp. 13-15.
682. HEYLAERTS, F. J. M. Description d'une nouvelle espèce de *Psychides*, *Chalia laminati*. Ann. Soc. ent. Belgique xlviii, p. 419. [*Lepidoptera*.]
683. HEYMONS, R. Die Hinterleibsanhänge der *Libellen* und ihrer Larven. Ann. Hofmus. Wien xix, pp. 21-58, pl. i. [*Odonata*.]
Cf. HANDLIRSCH (662).
684. —. [Review of recent works on classification of Insecta. Zool. Zentrbl. 1905, pp. 94-97.]
685. HEYN, K. Eine neue afrikanische *Ilema*-Art. Soc. ent. xix, p. 25. [*Lepidoptera*.]
686. HILZHEIMER, M. Studien über den Hypopharynx der *Hymenopteren*. Jena. Zeitschr. xxxix, pp. 119-150, pl. ii.
Abstract by HEYMONS, Zool. Zentrbl. 1905, p. 103.
687. HIMSL, F. Die *Geometriden* Oberösterreichs. Soc. ent. xix, pp. 41 etc. etc. [*Lepidoptera*.]
688. HINE, J. S. The *Diptera* of British Columbia (First part). Canad. Ent. xxxvi, pp. 85-92.
For part II (*Syrphidæ*) see OSBURN (1003).
689. —. New species of North American *Tabanidæ*. T. c. pp. 55, 56. [*Diptera*.]
690. —. On *Diptera* of the family *Ephydridæ*. Ohio Natural. iv, pp. 63-65.
691. —. The *Tabanidæ* of Western United States and Canada. Op. cit. v, pp. 217-248. [*Diptera*.]

692. HIRSCH, J. Die Lautäusserungen der Käfer. Soc. ent. xix, pp. 82, 89, 97. [*Coleoptera.*]
693. HIRSCHLER, J. Weitere Regenerationsstudien an *Lepidopterenpuppen*. (Regeneration des vorderen Körperendes.) Anat. Anz. xxv, pp. 417-435.
694. HOFFMANN, R. W. Über den Ventraltubus von *Tomocerus plumbeus* L. und seine Beziehungen zu den grossen unteren Kopfdrüsen. Ein Beitrag zur Kenntnis der *Collembolen*. Zool. Anz. xxviii, pp. 87-115.
695. HOLDHAUS, K. Beiträge zur Kenntnis der *Koleopteren*-Geographie der Ostalpen. München. Kol. Zeitschr. ii, pp. 215-227.
Includes description of an *Anophthalmus* by GANGLBAUER.
696. HOLE, R. S. Two notorious Insect pests. J. Bombay Soc. xv, pp. 679-697, pls. A-E. [*Lepidoptera.*]
697. HOLMBERG, E. L. Delectus *hymenopterologicus* Argentinus, *Hymenopterorum Argentinorum* et quorundam exoticorum observationes synonymicas, addendas, novorumque generum specierumque descriptiones continens. An. Mus. Buenos Aires (3) ii, pp. 377-517.
698. HOLMES, S. J. Phototaxis in *Ranatra*. [Abstract] Science xix, p. 212. [*Hemiptera.*]
699. HOLMGREN, N. Zur Morphologie des Insektenkopfes. I. Zum metameren Aufbau des Kopfes der *Chironomus*larve. Zeitschr. wiss. Zool. lxxvi, pp. 439-477, pls. xxvii, xxviii.
Abstract by DE MEIJERE, Zool. Zentrbl. 1904, pp. 452-454.
700. —. Zur Morphologie des Insektenkopfes. II. Einiges über die Reduktion des Kopfes der *Dipteren*larven. Zool. Anz. xxvii, pp. 343-355.
701. —. Ameisen (*Formica exsecta* Nyl.) als Hügelbildner in Sumpfen. Zool. Jahrb. Syst. xx, pp. 353-370. [*Hymenoptera.*]
702. HOMMELL, R. Anatomie et physiologie de l'Abeille domestique. Microg. prep. xii, pp. 49-60, etc. etc., pls. xxvii, xxviii.
703. HOOPER, D. Indian bees'-wax (*Apis dorsata* etc.). Agric. Ledger 1904, No. 7, pp. 73-110.
704. HOPKINS, A. D. Catalogue of exhibits of insect enemies of forests and forest products exhibited at the Louisiana Purchase exposition, St Louis Mo., 1904. Bull. U. S. Dep. Agric. Ent. No. 48, 56 pp., 22 pls.
705. HÖPFNER, H. Zur Biologie der *Rubus*-Bewohner. I. Allg. Zeitschr. Ent. ix, pp. 97-103. II. T. c. pp. 129-134. III. T. c. pp. 161-170, 18 cuts. [*Hymenoptera.*]
706. HORMUZAKI, K. VON. Nachträge zur *Lepidopteren*-fauna der Bukovina. Verh. Ges. Wien liv, pp. 422-447.
707. *—. Analytische Übersicht der palaearktischen *Lepidopteren*-familien. Berlin, 1904, 68 pp.
708. HORN, W. Ueber die *Cicindeliden*-Sammlungen von Paris und London. Deutsche ent. Zeitschr. 1904, pp. 81-99. [*Coleoptera.*]
709. —. 4 Neue *Cicindeliden* gesammelt von den Herren Oscar Neumann und Baron von Erlanger auf ihrer Expedition vom Roten Meer zum Nil. T. c. pp. 423-427. [*Coleoptera.*]
710. —. *Cicindela innocentior* (nov. spec.). T. c. p. 427. [*Coleoptera.*]

711. [HORN, W.] Zur Kenntniss der *Cicindeliden*-Fauna von Kamerun und seiner Hinterländer. T. c. pp. 429-431. [*Coleoptera*.]
712. —. *Megacephala ertli* (nov. spec.). T. c. p. 432. [*Coleoptera*.]
713. —. The *Cicindelidæ* of Ceylon. Spolia Zeylan. ii, pp. 30-44, 1 pl. [*Coleoptera*.]
714. HORVÁTH, G. Monographia *Colobathristinarum*. Ann. Mus. Hungar. ii, pp. 117-172. [*Hemiptera*.]
715. —. *Pentatomidæ* novæ africanæ. T. c. pp. 253-271. [*Hemiptera*.]
716. —. Species palæarcticæ generis *Caliscelis* Lap. T. c. pp. 378-385. [*Homoptera*.]
717. —. Insecta Heptapotamica a DD. Almásy et Stummer-Traunfels collecta. I. *Hemiptera*. T. c. pp. 574-590.
718. —. *Hydrocorisæ* tres novæ. T. c. pp. 594, 595. [*Hemiptera*.]
719. HOUARD, C. Recherches anatomiques sur les galles de tiges: pleuro-cécidies. Bull. Sci. France Belgique xxxviii, pp. 140-419.
720. HOULBERT, C. Faune entomologique armoricaine. Introduction. Généralités sur les *Coléoptères*. pp. 1-16. [Appendix to Bull. Soc. sci. med. Ouest France xiii.]
721. — & BÉTIS, L. Faune entomologique Armoricaine. 52^e famille. *Clérides*. 21 pp. Suppl. to Bull. Soc. sci. med. Ouest. France xiii, [*Coleoptera*.]
- 721A. HOWARD, L. O. The transmission of yellow fever by mosquitoes. Rep. ent. Soc. Ontario xxxiv, pp. 26-30.
- 721B. —. Recent work in American economic entomology. T. c. pp. 38-40.
722. HOYNINGEN-HUENE, F. Beiträge zur Kenntniss der *Lepidopteren*-fauna von Krasnoufirsksk. Berlin. ent. Zeitschr. xlix, pp. 1-54.
723. *HUDSON, G. V. New Zealand Neuroptera: a popular introduction to the life-histories and habits of May-flies, Dragon-flies, Caddis-flies and allied insects inhabiting New Zealand: including notes on their relation to angling. London, 8vo, viii+102 pp., 11 pls.
Noticed Entomologist 1904, p. 148. Review, by W. F. K., Nature lxx, p. 195.
724. HÜBER, TH. Systematisches Verzeichnis der deutschen *Zikadinen*. Jahresh. ver. Württemb. lx, pp. 253-277. [*Homoptera*.]
725. —. Beitrag zur Biologie seltener einheimischer Insekten. T. c. pp. 278-286. [*Coleoptera*, *Hemiptera*.]
726. HUTTON, F. W. Index faunæ Novæ Zealandiæ. London, 1904, 8vo, viii+372 pp.
Introduction; historical; dissertation on the region: pp. 1-23.
727. —. Revision of the New Zealand members of the genus *Phorocera*. Tr. N. Zealand Inst. xxxvi, pp. 150-153. [*Diptera*.]
728. —. Two new flies. T. c. pp. 153, 154. [*Diptera*.]
729. —. On a new Weta from the Chatham islands. T. c. p. 154. [*Orthoptera*.]
730. —. Description of a new Blow-fly from Campbell island. T. c. p. 155. [*Diptera*.]

731. IHERING, R. VON. Note sur des *Vespidés* du Brésil. Bull. Soc. ent. France 1904, pp. 84-86. [*Hymenoptera*.]
Apparently a translation, though not indicated as such, from Revist. Mus. Paulista vi.
- 731A. [IHERING, H. VON. Biology of stingless bees. Cf. Zool. Rec. 1903, INSECTA (748).]
Abstract by DALLA TORRE, Zool. Zentrbl. 1904, p. 150. Cf. also GRÜNBERG (642).
732. JABLONOWSKI, J. A Körtéfának egy különös ellenségéről. Rov. Lapok xi, pp. 67-72 & 89-94. [*Hymenoptera*.]
733. JACOBI, A. *Homopteren* aus Nordost-Afrika, gesammelt von Oscar Neumann. Zool. Jahrb. Syst. xix, pp. 761-782, pl. xlv.
734. —. Ueber die *Flatiden*-Gattung *Poeciloptera* Latr. insbesondere der Formenring von *P. phalaenoides* (L.). SB. Ges. naturf. Berlin 1904, pp. 1-14. [*Homoptera*.]
735. —. Ueber ostafrikanische *Homopteren*. T. c. pp. 14-17.
736. —. Neue *Cicadiden* und *Fulgoriden* Brasiliens. T. c. pp. 155-164. [*Homoptera*.]
737. —. Verwandlung und Larvenschaden von *Brachyderes incanus* L. Zeitschr. Land-Forstwirtschaft ii, 1904, pp. 353-357. [*Coleoptera*.]
738. JACOBS, J. C. Catalogue des *Apides* de Belgique. Ann. Soc. ent. Belgique xlviii, pp. 190-203. [*Hymenoptera*.]
739. JACOBSON, G. Aperçu des classifications de l'Ordre des *Coléoptères*. Rev. Russe Ent. 1904, pp. 268-276.
740. —. *Coleoptera* Mandshuriæ meridionalis et peninsulæ Quantungensis, ab A. N. Gudzenko allata. Annuaire Mus. St. Petersb. viii, pp. xi-xvi.
741. —. Zur Kenntniss der *Termiten* Russlands. Op. cit. ix, pp. 57-107.
Includes a section on *Hodotermes vagans septentrionalis* by WASSILJEW.
742. JACOBY, M. Descriptions of some new species of Phytophagous *Coleoptera* obtained by Baron E. Nordenskiöld in Bolivia and the Argentine Republic. Arkiv Zool. i, pp. 513-524.
743. —. Descriptions of new genera and species of phytophagous *Coleoptera* obtained by Dr Loria in New Guinea. Ann. Mus. Genova xli, pp. 469-514.
744. —. Another contribution to the knowledge of Indian phytophagous *Coleoptera*. Ann. Soc. ent. Belgique xlviii, pp. 380-406.
745. —. Another contribution to the knowledge of African Phytophagous *Coleoptera*. P. Zool. Soc. London 1904, i, pp. 230-270, pl. xiii.
746. —. Descriptions of thirty-two new species of *Halticinae* (Phytophagous *Coleoptera*) from South and Central America. Op. cit. ii, pp. 396-413.
747. —. Descriptions of some new species of *Mastotethus* (Phytophagous *Coleoptera*). Entomologist 1904, pp. 63-68.
748. —. Descriptions of some new species of *Chlamyde* from South America. T. c. pp. 197-202. [*Coleoptera*.]

749. [JACOBY, M.] Description of some new species of Phytophagous *Coleoptera*. T. c. pp. 293-296.
750. — & CLAVAREAU, H. *Coleoptera Phytophaga* Fam. *Donacidae*. Wytzman Gen. Ins. fasc. 21, 14 pp., 1 pl.
751. — & —. *Crioceridae*. Op. cit. fasc. xxiii, 40 pp., 5 pls. [*Coleoptera*.]
752. JAKOVLEFF, B. E. Études sur les espèces du genre *Sphenoptera* Sol. (*Coleoptera, Buprestidae*). vi. Horæ Soc. ent. Ross. xxxvii, pp. 174-186.
753. —. Description d'une nouvelle *Sphenoptera* (s.-g. *Hoplandrocneme* Sem.) de la Transcaucasie (*Coleoptera, Buprestidae*). Rev. Russe Ent. 1904, p. 309.
754. —. *Hémiptères-Hétéroptères* de la faune paléarctique. ix. T. c. pp. 23-26. x. T. c. pp. 93-95.
755. —. *Hémiptères-Hétéroptères* nouveaux de la faune paléarctique. T. c. pp. 292-294.
756. —. *Geocoris chinensis* n. sp. et les espèces paléarctiques du sous-genre *Piocoris* Stål (*Hemiptera-Heteroptera, Lygacidae*). T. c. pp. 170, 171.
757. —. *Palomena limbata* sp. n. (*Hemiptera-Heteroptera, Pentatomidae*). Horæ Soc. ent. Ross. xxxvii, pp. 71-73.
758. JAMES, S. P. Malaria in India. Sci. Mem. India (n. s), No. 2, 106 pp., 1902. [*Diptera*.]
Previously overlooked. Observations on *Anopheles* mosquitoes and their larvæ, pp. 27-59.
759. —. First report of the anti-malarial operations at Mian Mir, 1901-1903. Op. cit. No. 6, 53 pp.
For second report see CHRISTOPHERS (277).
760. — & LISTON, W. G. A monograph of the *Anopheles* mosquitoes of India. Calcutta, 1904, 4to, vi + 132 pp., xv uncoloured + xv coloured plates. [*Diptera*.]
761. JANET, A. Les Papillons. Causeries Soc. zool. France i, No. 9, pp. 309-350.
762. JENKINSON, F. *Asteia elegantula* Zett., a species of *Diptera* new to Britain. Ent. Mag. xl, p. 4.
763. JOANNIS, J. DE. Description de deux *Lépidoptères hétérocères* nouveaux provenant de Nova Friburgs (Montagnes des Orgues, Brésil). Bull. Soc. ent. France 1904, pp. 289-291.
764. JOHANSEN, J. P. Om Undersogelse af Myretuer samt Fortegnelse over de i Danmark fundne, saakaldte myrmecophile Biller. Ent. Meddel. ii, pp. 217-265. [*Coleoptera*.]
765. JOHNSON, C. W. Some notes, and descriptions of four new *Diptera*. Psyche xi, pp. 15-20.
766. JONES, F. M. Pitcher-plant Insects. Ent. News Philad. xv, pp. 14-17, pls. iii, iv.
767. JORDAN, K. Some new Oriental *Anthribidae*. Nov. Zool. xi, pp. 230-237.
768. —. Some new African *Anthribidae*. T. c. pp. 238-241. [*Coleoptera*.]

769. [JORDAN, K.] American *Anthribidae*. T. c. pp. 242-309. [*Coleoptera*.]
770. —. Some new African *Cerambycidae*. T. c. pp. 364, 365. [*Coleoptera*.]
771. —. Some new moths. T. c. pp. 441-447. [*Lepidoptera*.]
772. —. Some new Oriental *Anthribidae*. Ann. Mus. Genova xli, pp. 80-91. [*Coleoptera*.]
JOUTEL, L. H. [See FELT & JOUTEL (495B).]
773. JOY, N. H. *Euconnus maklini* Mannh.; a new British beetle. Ent. Mag. xl, p. 6. [*Coleoptera*.]
774. KATHARINER, L. Mimikry, Selektion, Darwinismus. Ins. Börse 1904, pp. 4 etc.
775. KAYE, W. J. A catalogue of the *Lepidoptera Rhopalocera* of Trinidad. With an appendix by J. GUPPY. Tr. ent. Soc. London 1904, pp. 159-228, pls. xvii, xviii.
776. KEARFOTT, W. D. New *Tortricids* from Kaslo B. C. and the Northwest. Canad. Ent. xxxvi, pp. 109-114, 137-141. [*Lepidoptera*.]
777. —. A new *Proteopteryx*. T. c. pp. 306-308. [*Lepidoptera*.]
778. —. *Microlepidoptera*—Suggestions. Ent. News Philad. xv, pp. 89-96, 127-136, 207-212.
779. KELLOGG, V. L. Amitosis in the egg follicle cells of insects. Science xix, pp. 392, 393.
780. —. Regeneration in larval legs of silkworms. J. exp. Zool. i, pp. 593-599.
781. —. Influence of the primary reproductive organs on the secondary sexual characters. T. c. pp. 601-605.
782. — & BELL, R. G. Notes on insect bionomics. J. exp. Zool. i, pp. 357-367.
783. — & —. Studies of variation in Insects. P. Washington Ac. vi, pp. 203-332, figg. 1-81.
784. — & CHAPMAN, B. L. *Mallophaga* from birds of the Hawaiian islands. Fauna Hawaiensis iii, pp. 305-321, pl. x.
Reprinted from J. N. York Ent. Soc. 1902.
785. KEMPNY, P. Beitrag zur *Neuropterenfauna* der Marschall-Inseln, nebst Beschreibung zweier neuer *Chrysopa*-Arten. Verh. Ges. Wien liv, pp. 352-355.
— [See also SCHNEE (1232).]
786. KERREMANS, C. Faune entomologique de l'Afrique tropicale. *Buprestides*. 1. Introduction, *Sulodines*. Ann. Mus. Congo iii, fasc. i, 65 pp., 1 pl. [*Coleoptera*.]
787. —. Monographie des Buprestides. Livrr. 1, 2, pp. 1-64, 8vo, Bruxelles, 1904.
Classification and Distribution.
788. KERSHAW, J. A. Notes on colour-variations of two species of Victorian butterflies. Victorian Natural. xx, pp. 173-175.
789. KERTÉSZ, K. Eine neue Gattung der *Sapromyziden*. Ann. Mus. Hungar. ii, pp. 73, 74. [*Diptera*.]
790. —. A magyarországi szúnygfélék rendszertani ismertetése. Allatt. Kozl. Magyar Tars. iii, pp. 1-75. [*Diptera*.]

791. KIEFFER, J. J. Species des *Hyménoptères*. Vol. vii bis, pp. 497-748, pls. xvii-xxi.
Completes this pt. of André's work: the present instalment includes *Trigonalides*, *Agriotypides*, and suppl. to *Cynipides*.
792. —. Description de deux *Cécidomyies* nouvelles d'Italie. Marcellia iii, pp. 91-94. [*Diptera*.]
793. —. Beschreibung neuer *Proctotrypiden* und *Evaniiden*. Arkiv Zool. i, pp. 525-562. [*Hymenoptera*.]
794. —. Description de nouveaux *Dryininæ* et *Bethylinæ* du Musée civique de Gênes. Ann. Mus. Genova xli, pp. 351-412. [*Hymenoptera*.]
795. —. Beschreibung einer neuen *Cynipide* aus Kamerun. Ent. Tidskr. xxv, pp. 107-110. [*Hymenoptera*.]
796. —. Neue *Eucharinæ* and *Chalcidinae*. Berlin. ent. Zeitschr. xlix, pp. 240-265. [*Hymenoptera*.]
797. —. Description d'un *Cynipide* formant un genre nouveau. Revist. chilena viii, pp. 43, 44. [*Hymenoptera*.]
798. —. Description d'un nouveau genre et de nouvelles espèces de *Proctotrypides* du Chili. T. c. pp. 142-146. [*Hymenoptera*.]
799. — & MARSHALL, T. A. *Proctotrypidae*. Pp. 1-64, pls. i-iii. [*Hymenoptera*.]
Forms fasc. 85 of Vol. ix of André Species des *Hyménoptères* d'Europe et d'Algérie.
800. KINCAID, T. The insects of Alaska. [in] Alaska viii, pp. 1-34.
801. —. The *Tenthredinoidea* of the expedition. [in] Alaska ix, pp. 79-105.
Reprint of memoir recorded in 1900, as are also the two next.
802. —. The *Sphegoidea* and *Vespoidea* of the expedition. [in] t. c. pp. 107-112. [*Hymenoptera*.]
803. —. The metamorphoses of some Alaska *Coleoptera*. T. c. pp. 187-210, pls. xiii-xvii.
804. KIRBY, W. F. Notes on *Mantidæ* in the collection of the British Museum (Natural History), South Kensington, with descriptions of new species. Ann. Nat. Hist. xiii, pp. 81-88. [*Orthoptera*.]
805. —. Notes on *Phasmidæ* in the collection of the British Museum (Natural History), South Kensington, with descriptions of new species. No. i. T. c. pp. 372-377. No. ii. T. c. pp. 429-449. [*Orthoptera*.]
806. —. Description of a new species of the Neuropterous family *Nemopteridæ*. Op. cit. xiv, pp. 59, 60.
- 806A. —. A synonymic Catalogue of *Orthoptera*. Vol. I. *Orthoptera*. *Euplexoptera*, *Cursoria*, et *Gressoria*. London, 1904, 8vo, x+501 pp.
807. *KIRK, T. W. Report of the Biologist. Rep. New Zealand Dep. Agric. x, pp. 359-470, xviii pls.
808. KIRKALDY, G. W. Notes on the genus *Metrocoris*. Entomologist 1904, pp. 61, 62. [*Hemiptera*.]
809. —. Some new Oahuan (Hawaiian) *Hemiptera*. T. c. pp. 174-179.
810. —. A list of the *Coccidæ* of the Hawaiian Islands. T. c. pp. 226-230.
811. —. Bibliographical and Nomenclatorial notes on the *Hemiptera*. T. c. pp. 254-258.

812. [KIRKALDY, G. W.] Bibliographical and nomenclatorial notes on the *Hemiptera*. T. c. pp. 279-283.
813. —. Über *Notonectiden* (*Hemiptera*). Teil I. Wien. ent. Zeit. xxiii, pp. 95-110; Teil II. pp. 111-135.
814. —. Upon maternal solicitude in *Rhynchota* and other non-social insects. Rep. Smithson. Inst. 1903, pp. 577-585.
Revised form of paper recorded last year.
815. Klapálek, F. Über die Gonopoden der Insekten und die Bedeutung derselben für die Systematik. Zool. Anz. xxvii, pp. 449-453.
816. —. Noch einige Bemerkungen über die Gonopoden der Insekten. Op. cit. xxviii, pp. 255-259.
817. —. Die Morphologie der Genitalsegmente und Anhänge bei *Trichopteren*. Bull. Ceska Ak. viii, pp. 161-197, v pls.
818. —. *Plecopteren*. Hamburg. Magalhaen. Reise vii, 13 pp.
819. —. Evropské druhy čeledě *Dictyopterygidae*. Rozp. Ceske Ak. Prave ii, xiii, No. 17, 10 pp. [*Perlidae*.]
820. Klima, A. Die paläarktischen Arten des *Staphyliniden*-Genus *Trogophloeus* Mannh. München. Kol. Zeitschr. ii, pp. 43-66. [*Coleoptera*.]
821. Knab, F. The epistomal appendages of mosquito larvae. J. N. York Ent. Soc. xii, pp. 175-177, pl. x. [*Diptera*.]
822. —. The eggs of *Culex territans* Walker. T. c. pp. 246-248.
— [See also DIMMOCK & KNAB (381).]
823. *KNOCKE, E. Beiträge zur Generationsfrage der Borkenkäfer. Forstwiss. Centrbl. 1904, pp. 1-73. [*Coleoptera*.]
Abstract by HEYMONS, Zool. Centrbl. 1905, pp. 99-101.
824. KOHAUT, R. Un *Pulicide* nouveau de Bosnie. Ann. Mus. Hungar. ii, pp. 87-89. [*Aphaniptera*.]
825. —. Eine neue *Pulicide* aus Bosnien. Allatt. Kozl. Magyar Tars. iii, p. 88. [*Aphaniptera*.]
Kohl, P. H. [See WASMANN, E. (1484A).]
826. KOKUJEV, N. Contributions à la faune des *Hyménoptères* de la prov. d'Irkoutsk. *Ichneumonidae* I. Rev. Russe Ent. iv, pp. 80-84.
827. —. *Hymenoptera* Asiatica nova. III. T. c. pp. 11-14. IV. T. c. pp. 106-108. V. T. c. pp. 213-215.
828. —. Description de deux nouvelles espèces de la famille des *Ichneumonidae* (*Hymenoptera*). T. c. pp. 199, 200.
829. Kolbe, H. J. Die morphologischen Verhältnisse der Artengruppen der afrikanischen *Coleopterengattung* *Teffus*. Berlin. ent. Zeitschr. xlix, pp. 117-158.
830. —. Ueber einige interessante *Lamellicornien* und *Tenebrioniden* Afrikas. T. c. pp. 282-302. [*Coleoptera*.]
831. —. Gattungen und Arten der *Valgiden* von Sumatra und Borneo. Stettin. Ent. Zeit. lxxv, pp. 3-57. [*Coleoptera*.]
An appendix includes a n. g. from Tonkin, and another from Africa.
832. Kolmer, W. Eine Beobachtung über vitale Färbung bei *Corethra plumicornis*. Biol. Centrbl. xxiv, pp. 221-223. [*Diptera*.]

833. KONOW, F. W. Ein neuer *Entodecta* Knw. Zeitschr. Hym. Dipt. iv, p. 4. [*Hymenoptera*.]
834. —. Revision der *Nematiden*-Gattung *Pachynematus* Knw. (Fortsetzung). T. c. pp. 25–32 & 145–161. [*Hymenoptera*.]
835. —. Revision der *Nematiden*-Gattung *Pteronus* Juv. Knw. (Schluss). T. c. pp. 33–44. [*Hymenoptera*.]
836. —. Revision der *Nematiden*-Gattung *Lygæonematus*. T. c. pp. 193–208, 248–260. [*Hymenoptera*.]
837. —. Neue paläarktische *Chalastogastra*. T. c. pp. 226–231, 260–269. [*Hymenoptera*.]
838. —. Ueber einige exotische *Tenthrediniden*. T. c. pp. 231–240, 241–248. [*Hymenoptera*.]
Pp. 241–256 occur twice in this volume; the second instalment of this paper is in the second set of pp. 241–256.
839. —. *Chalastogastra* (continuation) pp. 225–253, etc. Zeitschr. Hym. Dipt. iv. [*Hymenoptera*.]
These parts have also a separate pagination, pp. 225–288.
840. KOPF, C. Beiträge zur Biologie der Insekten. Jahresh. Ver. Württemb. lx, pp. 344–350. [*Hymenoptera*.]
841. KRAMER, H. Zur Gattung *Sarcophaga*. Zeitschr. Hym. Dipt. iv, pp. 347–349. [*Diptera*.]
842. *KRANCHER, O. Entomologisches Jahrbuch xiii, Leipzig 1904, 248 pp.
843. KRAUSZE, A. H. Zwei neue *Phaneropteriden*arten. Ins. Börse 1904, p. 29. [*Orthoptera*.]
844. —. Zwei neue *Conocephalidenspezies*. T. c. p. 213. [*Orthoptera*.]
845. KRIEGER, R. Ueber die *Ichneumonidengattung* *Trichomma* Wesm. Zeitschr. Hym. Dipt. iv, pp. 162–172. [*Hymenoptera*.]
846. KRODEL, E. Durch Einwirkung niederer Temperaturen auf das Puppenstadium erzielte Aberrationen der *Lycæna*-Arten, *corydon* Poda und *damon* Schiff. Allg. Zeitschr. Ent. ix, pp. 49–55, 103–109 & 134–136. [*Lepidoptera*.]
847. KÜNCKEL, J. d'HERCULAIS. Les *Lépidoptères Limacodides* et leurs *Diptères parasites, Bombylides* du genre *Systropus*. Adaptation parallèle de l'hôte et du parasite aux mêmes conditions d'existence. C.R. Ac. Sci. cxxxviii, pp. 1623–1625.
848. KUNZE, R. E. Protective resemblance. Ent. News Philad. xv, pp. 239–244.
849. KUSNEZOV, N. J. On the development of ocellated spots in the larvæ of *Deilephila nerii* L. and *Pergesa porcellus* L. Rev. Russe Ent. iv, pp. 154–161. [*Lepidoptera*.]
850. —. Observations on *Embia taurica* Kusnezov (1903) from the southern coast of the Crimea. Horæ Soc. ent. Ross. xxxvii, pp. 138–173. [*Neuroptera*.]
In Russian. Abstract in English, pp. 166–169.
851. —. Beiträge zur Kenntniss der Grossschmetterlinge des Gouvernements Pskov (Pleskau). II. Erster Nachtrag. T. c. pp. 17–70. [*Lepidoptera*.]

852. LAMB, C. G. *Periscelis annulata* Fall., a *Drosophilid* new to Britain, and *Ochthera mantispa* Lw., an *Ephydrid* new to Britain. Ent. Mag. xl, p. 277. [*Diptera*.]
853. LAMEERE, A. L'évolution des ornements sexuels. Bull. Ac. Belgique 1904, pp. 1327-1364.
854. —. Revision des *Prionides*. Neuvième mémoire.—*Callipogonines*. Ann. Soc. ent. Belgique xlviii, pp. 7-78. [*Coleoptera*.]
855. —. ...Dixième mémoire. *Titanines*. T. c. pp. 309-352. [*Coleoptera*.]
856. LAMPA, S. Berättelse till Kongl. Landtbruksstyrelsen angående verksamheten vid Statens entomologiska Anstalt under år 1903. Ent. Tidskr. xxv, pp. 1-64.
857. —. Några af våra för trädgården nyttigaste insekter. T. c. pp. 209-216, 1 pl.
858. LATHY, P. I. On some aberrations of *Lepidoptera*. Tr. ent. Soc. London 1904, pp. 65-70, pl. x.
859. —. New species of S. American *Erycinidae*. T. c. pp. 463-468, pl. xxvii. [*Lepidoptera*.]
860. —. Description of a new species of *Cyrestis*. Entomologist 1904, p. 71. [*Lepidoptera*.]
861. —. A contribution towards the knowledge of the *Lepidoptera-Rhopalocera* of Dominica, B.W.I. P. Zool. Soc. London 1904, i, pp. 450-454.
862. LEA, A. M. Descriptions of Australian *Curculionidae*, with notes on previously described species. Part II. Tr. R. Soc. S. Austral. xxviii, pp. 77-134. [*Coleoptera*.]
863. —. Notes on Australian and Tasmanian *Cryptocephalides*, with descriptions of new species. Tr. ent. Soc. London 1904, pp. 329-461, pls. xxii-xxvi. [*Coleoptera*.]
864. —. Descriptions of new species of Australian *Coleoptera*. Part VII. P. Linn. Soc. N. S. Wales xxix, pp. 60-107, pl. iv.
— [See also FROGGATT (561).]
865. LEACH, J. A. On the occurrence of the mosquito *Anopheles* in Victoria. Victorian Natural. xxi, pp. 9-12. [*Diptera*.]
866. LEBEDEF, A. Über die Speicheldrüsen der Küchenschabe (*Periplaneta orientalis* L.). Trudui Kazan. Univ. xxxiii, pp. 20+4, 1 pl.
867. *LEBREDO, M. Algunas observaciones sobre la Anatomia del Mosquito, con dibujos originales. Revist. medicina trop. April 1904, 6 pls.
868. *LÉCAILLON, A. Insectes et autres Invertébrés nuisibles aux plantes cultivées et aux animaux domestiques. Paris, 1903, 182 pp.
869. LE DANTEC, A. & BOYÉ, —. Note sur une myase observée chez l'homme en Guinée française. C.R. Soc. Biol. lvii, p. 602. [*Diptera*.]
870. LÉGER, L. Sporozoaires parasites de l'*Embia solieri* Rambur. Arch. Protistenk. iii, pp. 358-366. [*Neuroptera*.]
LEICESTER. — [See THEOBALD (1371).]
871. LEIGH, G. F. Synepigonic series of *Papilio cenea* (1902-3) and *Hypolimnas misippus* (1904), together with observations on the life-history of the former. With notes by E. B. POULTON and an appendix by R. TRIMEN. Tr. ent. Soc. London 1904, pp. 677-692, pls. xxxi, xxxii. [*Lepidoptera*.]

872. LEINEMANN, K. Über die Zahl der Facetten in den zusammengesetzten Augen der *Coleopteren*. Inaugural-Dissertation. Hildesheim, 1904, 64 pp.
873. LELEAN, P. S. Notes on *Myiasis*. Brit. Med. J. 1904, i, pp. 245, 246, 1 fig.
874. LEON, N. Comment se fait chez l'homme l'inoculation du paludisme par les *Anopheles*. Bull. Soc. Jassy xviii, pp. 97, 98.
875. —. Vorläufige Mitteilung über den Saugrüssel der *Anopheliden*. Zool. Anz. xxvii, pp. 730-732. [*Diptera*.]
876. LESNE, P. Supplément au Synopsis des *Bostrychides* paléarctiques. Abeille xxx, pp. 153-168, pls. iii, iv. [*Coleoptera*.]
877. —. *Cicindelides* et *Carabides*. Mission Pavie iii, pp. 58-81, pl. viii. [*Coleoptera*.]
878. —. Notes biologiques sur l'*Hispa testacea* L. Bull. Soc. ent. France 1904, pp. 68-70. [*Coleoptera*.]
879. —. Nouvelles observations sur les mœurs de la mouche de l'asperge. C.R. Soc. Biol. lvi, pp. 1006-1008. [*Diptera*.]
880. LEWIS, G. On new species of *Histeridae* and notices of others. Ann. Nat. Hist. xiv, pp. 137-151, pl. vii. [*Coleoptera*.]
881. LINDEN, MARIA VON. Einfluss des Stoffwechsels der Schmetterlingspuppe auf Flügelfärbung und Zeichnung des Falters. Ein Beitrag zur Physiologie der Varietäten-Bildung. Arch. Rassen i, pp. 477-518.
882. —. Die Ergebnisse der experimentellen *Lepidopterologie*. Biol. Centrbl. xxiv, pp. 615-634.
883. —. W. Biedermanns Untersuchungen über geformte Sekrete. T. c. pp. 182-189.
Abstract of BIEDERMANN [Zool. Rec. 1903, Ins. (126).]
884. —. Karl, Rudolf, Dietrich Fickert. Leopoldina, 1904, pp. 52-54.
LISTON, W. G. [See JAMES & LISTON (760).]
885. LITTLER, F. M. Some Tasmanian case-bearing *Lepidoptera*. Entomologist 1904, pp. 310-315.
886. LOVERDO, J. DE. L'étouffages des cocons par le froid artificiel. C.R. Ac. Sci. cxxxviii, pp. 1434-1436.
887. LOWE, F. Catalogue of *Lepidoptera*. Vol. I, pt. 1, *Danaina*. London, 1904, 8vo, 51 pp.
888. LOWER, O. B. Descriptions of new species of Australian *Elachistidae* etc. Tr. R. Soc. S. Austral. xxviii, pp. 168-180. [*Lepidoptera*.]
889. LUCAS, R. Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1900. *Hymenoptera*, *Lepidoptera*, pp. 289-944. [Taken from Arch. Naturg.]
890. LUCAS, W. J. Dragonflies in 1902 and 1903 [in Britain]. Entomologist 1904, pp. 29-34 & 84, pl. iii. [*Odonata*.]
891. LUDLOW, C. S. Concerning some Philippine mosquitoes. Canad. Ent. xxxvi, pp. 69-72. [*Diptera*.]
892. —. Mosquito notes. T. c. pp. 233-236 & 297-301. [*Diptera*.]
893. LUTZ, A. & SPENDORE, A. Ueber Pebrine und verwandte Mikrosporidien. Centrbl. Bakter. Orig. xxxvi, pp. 645-650, pls. i-iv. [*Lepidoptera*.]

894. LUTZ, F. E. Variation in bees. Biol. Bull. vi, pp. 217-219.
Relates to CASTEEL & PHILLIPS' paper of last year. PHILLIPS replies, op. cit. viii, pp. 70-74.
895. LUZE, G. Beitrag zur *Staphyliniden*-Fauna von Russisch-Central-Asien. Horæ Soc. ent. Ross. xxxvii, pp. 74-115. [*Coleoptera*.]
896. —. Zwei neue Käferarten aus Russisch-Central-Asien. München. Kol. Zeitschr. ii, pp. 69, 70. [*Coleoptera*.]
897. LYNCH ARRIBALZA, E. La langosta voladora del Perú. An. Mus. Buenos Aires (3) ii, pp. 1-5. [*Orthoptera*.]
898. MABILLE, P. *Lepidoptera Rhopalocera*, Fam. *Hesperiidae*, pp. 79-210, pls. iv.
Forms part of Wytzman's Genera Insectorum.
899. MAINDRON, M. Notes sur quelques *Cicindelidae* et *Carabidae* de l'Inde, et description d'espèces nouvelles. Bull. Soc. ent. France 1904, pp. 263-265. [*Coleoptera*.]
900. MANDERS, N. The butterflies of Ceylon. J. Bombay Soc. xvi, pp. 76-85. [*Lepidoptera*.]
901. —. Some breeding experiments on *Catopsilia pyranthe* and notes on the migration of butterflies in Ceylon. Tr. ent. Soc. London 1904, pp. 701-708, pls. xxxiv, xxxv. [*Lepidoptera*.]
902. MANTERO, G. Res ligusticæ xxxiii. Materiali per un Catalogo degli *Imenotteri* liguri. Ann. Mus. Genova xli, pp. 14-51.
903. —. Descrizione di tre nuove specie di *Braconidi* del genere *Rhogas* nees raccolte nell' Africa orientale. T. c. pp. 413-416. [*Hymenoptera*.]
904. —. Materiali per una fauna dell' Arcipelago Toscano Isola del Giglio. II. T. c. pp. 449-454. [*Hymenoptera*.]
Includes Description of n. g. by the late T. A. Marshall.
905. MANZI, L. Gli dei distruttori degli Anofeli e l' uso antico delle fumigazioni e delle reti contro di essi. Arch. parasit. viii, pp. 88-109.
906. MARCHAL, P. Recherches sur la biologie et le développement des *Hyménoptères* parasites. I. La polyembryonie spécifique ou germinogonie. Arch. Zool. exp. 1904 (4), ii, pp. 257-335, pls. ix-xiii.
907. —. Le déterminisme de la polyembryonie spécifique et le déterminisme du sexe chez les *Hyménoptères* à développement polyembryonnaire. C.R. Soc. Biol. lvi, pp. 468-470.
908. —. Sur la formation de l'intestin moyen chez les *Platygaster*. T. c. p. 1091. [*Hymenoptera*.]
909. —. Sur une Cochenille nouvelle, récoltée par M. Ch. Alluaud sur l'Intisy-à-caoutchouc de Madagascar. Ann. Soc. ent. France 1904, pp. 557-561. [*Coccidae*.]
910. —. La *Cécidomyie* des Caroubes. T. c. pp. 561-564. [*Diptera*.]
911. —. Diagnose d'une *Cécidomyie* nouvelle vivant sur le Caroubier. Bull. Soc. ent. France 1904, p. 272. [*Diptera*.]
912. * —. Rapport sur la Pyrale de la Vigne (*Oenophthira pilleriana* Schiff.). Bull. off. renseign. agr. 1903, 20 pp.
913. —. Sur la biologie du *Chrysomphalus dictyospermi* var. *minor* Berlese, et sur l'extension de cette Cochenille dans le bassin méditerranéen. Bull. Soc. ent. France 1904, pp. 246-249. [*Coccidae*.]

914. MARLATT, C. L. Importations of beneficial insects into California. Bull. U. S. Dep. Agric. Ent. xlv, pp. 50-56.
915. MARSHALL, G. A. K. A monograph of the *Coleoptera* of the genus *Hipporrhinus* Schh. (*Curculionidae*). P. Zool. Soc. London 1904, i, pp. 6-141, pls. i-iv.
MARSHALL, T. A. (the late). [See MANTERO (904) & KIEFFER & MARSHALL (799).]
916. MARSHALL, W. S. The marching of the Larva of the Maia Moth, *Hemileuca maia*. Biol. Bull. vi, pp. 260-265.
917. — & SEVERIN, H. Some points in the Anatomy of *Ranatra fusca* P. Beauv. Tr. Wisconsin Ac. xiv, pp. 487-501, pls. xxxiv-xxxvi. [*Hemiptera*.]
918. MARTIN, J. Un nouveau genre du groupe des *Natalicolaria* (*Tes-seratominae*) de l'Inde méridionale. Bull. Mus. Paris 1904, pp. 314-316. [*Hemiptera*.]
MARTIN, J. [See also NOUALHIER & MARTIN (984).]
919. MARTIN, R. Liste des *Neuroptères* de l'Indo-Chine. Mission Pavie iii, pp. 204-221. [*Odonata*.]
920. *MARTINEZ, E. Un caso grave de larvas en la Nariz. Rev. med. tropic. 1904, 10 pp., 2 pls.
921. *MARTYNOW, A. Ueber den Ursprung der peritropfen Hüllen bei den Larven der *Trichopteren*. Mt. Ges. Moskau xcvi.
In Russian; abstract by v. ADELUNG, Zool. Zentrbl. 1904, pp. 316-318.
922. MATSUMURA, S. Additamenta zur Monographie der *Cercopiden* Japans, mit der Beschreibung einer neuen *Cicada*-Art. Annot. zool. Japon. v, pp. 31-54, pls. ii & iii. [*Homoptera*.]
923. *MATTEI, G. E. Osservazioni biologiche intorno ad una galla. Bull. Ort. bot. Napoli i, 1903, 13 pp., 1 pl. [*Hymenoptera*.]
Cynips mayri, Abstract, Marcellia ii, pp. xli, xlii.
924. MAXWELL-LEROY, H. The present position of economic entomology in India. J. Bombay Soc. xv, pp. 432 etc.
925. MAYET, V. Description d'un *Aphodius* nouveau de France. Bull. Soc. ent. France 1904, pp. 130-132. [*Coleoptera*.]
926. —. Description d'une espèce nouvelle du genre *Diaprysius*. Bull. Soc. Nîmes xxxi, pp. 30, 31. [*Coleoptera*.]
927. MAYR, G. *Formiciden* aus Ägypten und dem Sudan. Jägerskiöld exp. No. 9, 11 pp. [*Hymenoptera*.]
928. —. *Hymenopterologische* Miscellen. III. Verh. Ges. Wien liv, pp. 559-598.
Contents:—Die *Ormyrus*-Arten Europas. Neue *Chalcididen* und *Proctotrupiden*. *Formiciden*.
929. MAZZARELLI, G. Studi sulla *Diaspis pentagona* Targ. I Note sull'organizzazione della larva. Atti Mus. Milano xliii, pp. 15-19. II. Note biologiche ed anatomiche. T. c. pp. 317-329. [*Coccidæ*.]
930. McCLENAHAN, ETHEL M. The development of the rostrum in *Rhynchophorus* *Coleoptera*. Psyche xi, pp. 89-102, pls. vi-ix.
931. McCracken, ISABEL. *Anopheles* in California, with description of a new species. Ent. News Philad. xv, pp. 9-14, pl. ii. [*Diptera*.]

932. MEI, LEA. Res italicæ XIII. *Ortotteri* delle Alpi marittime. *Locustidi* e *Acrididi*. Boll. Mus. Torino xix, No. 473, 6 pp.
933. MEIJERE, J. C. H. DE. Beiträge zur Kenntniss der Biologie und der systematischen Verwandtschaft der *Conopiden*. Tijdschr. Ent. xlv, pp. 144–225, pls. xiv–xvii. [*Diptera*.]
Abstract by author, Zool. Zentrbl. 1904, p. 454.
934. —. Neue und bekannte süd-asiatische *Dipteren*. Bijdr. Dierkunde xviii, pp. 85–117, pl. viii.
The descriptions of some of the species were made by the late F. M. VAN DER WULP.
935. —. Zwei neue *Dipteren* aus dem Ostindischen Archipel. Notes Leyden Mus. xxv, pp. 177, 178.
936. MELANDER, A. L. Notes on North American *Stratiomyidæ*. Canad. Ent. xxxvi, pp. 14–24, 53–54. [*Diptera*.]
937. MELICHAR, L. Neue *Homopteren* aus Süd-Schoa, Galla und den Somali-Ländern. Verh. Ges. Wien liv, pp. 25–48.
938. —. Rozbor kříśů palearktických z čeledi *Membracidæ* Stål a *Cercopidæ* Stål. Vestník. Klub. Prostějov iv, pp. 3–34, 2 pls. [*Homoptera*.]
Entirely in Moravian.
939. —. Rozbor kříśů palearktických z čeledi *Cicadidæ* Fieb. T. c. pp. 12–27. [*Homoptera*.]
940. MERRIAM, C. H. Alaska. Vol. viii, Insects, part i, pp. ix+238, xvii pls. Vol. ix, Insects, part ii, ix+284 pp., iv pls. New York, 1904.
These Vols. are made up by numerous Contributors. Most of the papers are reprints from P. Washington Ac. ii, 1900, and their contents are therefore not given in detail; but the titles are fresh, and corrigenda have been added to each. The pagination and plates are same as in the original.
941. METALNIKOFF, N. Sur un procédé nouveau pour faire des coupes microscopiques dans les animaux pourvus d'un tégument chitineux épais. Arch. zool. exp. Notes 1904, pp. lxvi, lxvii.
METALNIKOW, S. [See SIEBER & METALNIKOW (1292).]
942. MEUNIER, F. Monographie des *Cecidomyidæ*, des *Sciaridæ*, des *Mycetophilidæ* et des *Chironomidæ* de l'ambre de la Baltique. Ann. Soc. Bruxelles xxviii, pp. 12–92 (incomplete). [*Diptera*.]
Also published as a separate work, with title-page, 264 pp., xvi pls.
943. —. Sur un *Corethra* de l'ambre de la Baltique. Bull. Soc. ent. France 1904, pp. 89–91. [*Diptera*.]
944. —. Sur une Cicadine du Kiméridgien de la Sierra del Montsech. (Catalogne). Feuille Natural. xxxiv, pp. 119–121. [*Homoptera*.]
945. —. Contribution à la faune des *Helomyzineæ* de l'ambre de la Baltique. Op. cit. xxxv, pp. 21–27. [*Diptera*.]
946. MEYRICK, E. Descriptions of Australian *Microlepidoptera*. xviii. *Gelechiadæ*. P. Linn. Soc. N. S. Wales xxix, pp. 255–441.
947. —. *Macrolepidoptera*, supplement. Fauna Hawaiensis iii, pp. 345–366.
948. —. New Hawaiian *Lepidoptera*. Ent. Mag. xl, pp. 130–133.

949. MIRANDA, V. C. DE. Molestias que affectam os animaes domesticos mormente o gado na ilha de Marajó. Bol. Mus. Gældi iv, pp. 438-468.
950. MJÖBERG, E. Eine neue *Forficulide*. Ent. Tidskr. xxv, p. 131.
951. MOCÁRY, A. Ueber die Gattung *Clavellaria* Oliv. Zeitschr. Hym. Dipt. pp. 350-352. [*Hymenoptera*.]
952. —. *Chrysididæ* in Africa meridionali a Dre H. Brauns collectæ. Ann. Mus. Hungar. ii, pp. 403-413. [*Hymenoptera*.]
953. —. *Siricidarum* species quinque novæ. T. c. pp. 496-498. [*Hymenoptera*.]
954. MÖLLENKAMP, W. Beitrag zur Kenntniss der *Lucaniden*. Ins. Börse 1904, pp. 341, etc. [*Coleoptera*.]
955. MOLLISON, T. Die ernährende Tätigkeit des Follikelepithels im Ovarium von *Melolontha vulgaris*. Zeitschr. wiss. Zool. lxxvii, pp. 529-545, pls. xxi, xxii.
Abstract, Zool. Zentrbl. 1905, p. 35.
956. MOORE, F. *Lepidoptera indica*. Parts lxvii-lxix, viz. Vol. vi, pp. 105-176, pls. 513-534. [*Papilionidæ* and *Pieridæ*.]
957. MORICE, F. D. Illustrations of the male terminal segments and armature in thirty-five species of the *Hymenopterous* genus *Colletes*. Tr. ent. Soc. London 1904, pp. 25-63, pls. vi-ix.
958. —. *Rhadinocera micans* Klug; a new British saw-fly. Ent. Mag. xl, p. 99. [*Hymenoptera*.]
959. — & SZÉPLIGETI, G. *Hymenoptera aculeata* from Egypt and the White Nile. Jägerskiöld exp. No. 14, 11 pp.
Includes 1 *Braconidæ*.
960. MORLEY, C. The *Coleoptera* of Norfolk and Suffolk. Tr. Norfolk Soc. vii, pp. 706-721.
— [See also FARREN and others (479).]
961. MORSE, A. P. Researches on North American *Acridiidæ*. Publ. Carnegie Inst. No. 18, 55 pp., 8 pls. [*Orthoptera*.]
962. —. New *Acridiidæ* from the South-eastern States. Psyche xi, pp. 7-13. [*Orthoptera*.]
963. MORTON, K. J. Further notes on *Hydroptilidæ*, belonging to the European fauna, with descriptions of new species. Tr. ent. Soc. London 1904, pp. 323-328, pl. xxi. [*Trishoptera*.]
— [See also FARREN and others (479).]
964. MOSER, J. Neue afrikanische *Cetoniden*-Arten. Berlin. ent. Zeitschr. xlix, pp. 59-70. [*Coleoptera*.]
965. —. Neue *Valgiden*-Arten. T. c. pp. 266-272. [*Coleoptera*.]
966. MOSS, A. M. Switzerland and its butterflies. Tr. Norfolk Soc. vii, pp. 674-681. [*Lepidoptera*.]
967. MOSSE, A. H. Locusts in Gujarat. J. Bombay Soc. xv, p. 528. [*Orthoptera*.]
968. MUCKERMANN, H. *Formica sanguinea*, subsp. *rubicunda* Em. and *Xenodusa cava* Lec.; or the discovery of pseudogynes in a district of *Xenodusa cava*. Ent. News Philad. xv, pp. 339-341, pl. xx. [*Hymenoptera*.]

969. MUIR, F. & SHARP, D. On the egg-cases and early stages of some *Cassididae*. Tr. ent. Soc. London 1904, pp. 1-24, pls. i-v. [*Coleoptera*.]
970. MÜLLER, J. Die *Koleopterengattung Apholeuonus* Reitt. Ein Beitrag zur Kenntnis der dalmatinischen Höhlenfauna. SB. Ak. Wien cxii, Abt. i, pp. 77-90, pl. i.
971. —. Zwei neue Höhlensilphiden von der Balkanhalbinsel. München. Kol. Zeitschr. ii, pp. 38-42. [*Coleoptera*.]
972. —. Beschreibungen neuer dalmatinischer *Koleopteren*. II. T. c. pp. 208, 210.
973. *NASSONOW, N. Zur Morphologie der Versonschen und Steinschen Drüsen der Insekten. Warsaw, 1903.
In Russian, cf. Zeitschr. wiss. Zool. lxxvi, p. 364.
974. NAVÁS, LONGINOS. Algunos *Neurópteros* de España nuevos. Bol. Soc. Aragon. ii, pp. 99-109.
975. —. Notas zoológicas. I. Las *Chrysopas* (Insectos *Neurópteros*). Bol. Soc. Aragon. iii, pp. 115-167. II. *Neuropteros* de la provincia de Barcelona cogidos por el P. EUGENIO SAZ, S.J. T. c. pp. 122-128. III. Algunos Insectos de Kurseong en la Cordillera del Himalaya. T. c. pp. 129-134. IV. Ortópteros de Mindanao (Filipinas). T. c. pp. 134-139. V. Excursion al Moncayo. T. c. pp. 139-167. VI. Excursion de la Sociedad Aragonesa de Ciencias naturales á la Sierra de Guara. T. c. pp. 190-201.
976. —. Notas *Neuropterológicas*. v. *Myrmeleonidos* de España. Butl. Inst. Catalan. i, pp. 6-10, 19-25, pl. i.
977. NEAVE, S. A. On a large collection of *Rhopalocera* from the shores of the Victoria Nyanza. Nov. Zool. xi, pp. 323-363, pl. i.
978. NEEDHAM, J. G. New dragon-fly nymphs in the United States National Museum. P. U. S. Mus. xxvii, No. 1371, pp. 685-720, pls. xxxviii-xliv. [*Odonata*.]
979. NEIRET, —. Paludisme et moustiques. Bull. econ. Madagascar iv, pp. 251-257.
980. NEWBERY, E. A. *Ocyusa nigrata* Fairm., a species of *Coleoptera* new to Britain, with remarks on the other British species of *Ocyusa*. Ent. Mag. xl, p. 251.
981. NICOLAS, A. Note critique sur les *D[orcadion] neilense* Esc., *almarzense* Esc. (et v. v. *urbionense* Esc. et *costatum* Esc.) *villosladense* Esc. Bol. Soc. Aragon. iii, pp. 35-40. [*Coleoptera*.]
982. NORMAND, H. Catalogue raisonné des *Psélaphides* de Tunisie. Abeille xxx, pp. 209-222. [*Coleoptera*.]
983. —. La chasse aux *Coléoptères* hypogés dans les Albères. Echange xx, pp. 63, 69, 76.
984. NOUALHIER, M. & MARTIN, J. *Hémiptères* recueillis par M. A. Pavie. Mission Pavie iii, pp. 167-185, pls. x, xi.
985. NURSE, C. G. New species of Indian *Hymenoptera Apidae*. J. Bombay Soc. xv, pp. 557-585.
986. —. New species of Indian *Hymenoptera*. Op. cit. xvi, pp. 19-26.
987. OBERTHÜR, C. Études de *Lépidoptérologie* comparée. Fasc. I. Rennes, 1904, 8vo, pp. 1-77, pls. i-vi.

988. [OBERTHÜR, C. Description d'une nouvelle espèce de *Sphingides*. Bull. Soc. ent. France 1904, pp. 13, 14. [*Lepidoptera*.]
989. —. Descriptions de nouveaux *Sphingides*. T. c. pp. 76-78. [*Lepidoptera*.]
990. OHAUS, F. Revision der *Anoplognathiden* (*Coleoptera Lamellicornia*). Stettin. Ent. Zeit. lxx, pp. 57-175, pls. i, ii.
991. —. Revision der Amerikanischen *Anoplognathiden*. Part i. T. c. pp. 254-341, pl. iii. [*Coleoptera*.]
992. —. Zur Biologie des *Geotrupes vernalis* L. Verh. Ver. Hamburg Unterh. xii, pp. 103-108. [*Coleoptera*.]
993. OLDENBERG, L. Die Gattung *Saucropus* Lw. (Dipt.). Zeitschr. Hym. Dipt. iv, pp. 65-81, pl. 1.
994. OLIVIER, E. Faune de l'Allier. Ordre des *Hémiptères*. Rev. Sci. Bourbonnais xvii, pp. 89-96 etc.
995. —. Faune de l'Allier. Les Pulicidés. T. c. pp. 48-55. [*Aphaniptera*.]
996. ORBIGNY, H. D'. *Onthophagides* africains de la collection du Musée civique de Gênes. Ann. Mus. Genova xli, pp. 253-331. [*Coleoptera*.]
997. —. *Onthophagides* provenant du voyage de M. L. Fea dans l'Afrique occidentale. T. c. pp. 416-448. [*Coleoptera*.]
998. —. Espèces nouvelles d'*Onthophagus* africains de la collection du Musée royal de Belgique. Ann. Soc. ent. Belgique xlviii, pp. 204-222. [*Coleoptera*.]
— [See also FELSCHÉ & D'ORBIGNY (494).]
999. ORMEROD, E. (the late). Eleanor Ormerod, LL.D., economic Entomologist, autobiography and correspondence. Edited by ROBERT WALLACE. London, 1904, 348 pp. [Cf. WALLACE (1468A).]
1000. OSBORN, H. Note on morphology of certain clasping organs in the *Pediculidae*. Ohio Natural. iv, pp. 107, 108.
1001. —. Notes on S. American *Hemiptera-Heteroptera*. Op. cit. v, pp. 195-204.
1002. —. A suggestion in nomenclature. Bull. U. S. Dep. Agric. Ent. xlv, pp. 56-60.
1003. OSBURN, R. C. The *Diptera* of British Columbia. Second part. The *Syrphidae*. Canad. Ent. xxxvi, pp. 213-220, 257-282.
For part 1, see HINE (688).
1004. OSTEN SACKEN, C. R. Record of my life work in Entomology. Part third. List of my entomological publications from 1854 to 1904, pp. 205-240, addenda and portrait. Heidelberg, 1904.
1005. PACKARD, A. S. Opisthenogenesis, or the development of segments, median tubercles and markings a tergo. P. Amer. Phil. Soc. xliii, pp. 289-294.
1006. —. The origin of the markings of organisms (Pæcilogensis) due to the physical rather than to the biological environment; with criticisms of the Bates-Müller hypotheses. T. c. pp. 393-450.
1007. —. Studies on the transformation of *Saturnian* moths, with notes on the life-history and affinities of *Brahmaea japonica*. P. Amer. Ac. xxxix, No. 22, pp. 545-578. [*Lepidoptera*.]

1008. [PACKARD, A. S.]. The colossal silk-worm moths of the genera *Attacus* and *Rothschildia*. Ent. News Philad. xv, pp. 4-6. [*Lepidoptera*.]
1009. —. Sound produced by a Japanese Saturnian caterpillar. J. N. York Ent. Soc. xii, p. 92. [*Lepidoptera*.]
1010. PANDELLÉ, L. Catalogue des *Muscides* de France. Supplement to Rev. Ent. franc. xxiii, pp. 1-41. [*Diptera*.]
Pp. 34-41 form the conclusion of his work on the *Muscidae* of France.
1011. PARKER, G. H. Phototropism of *Vanessa antiopa*. Mark Anniv. Vol. pp. 453-469, pl. xxxiii. [*Lepidoptera*.]
— [See also FIELDE & PARKER (508).]
- 1011A. PAVIE, A. Mission Pavie. Indo-Chine 1879-1895. Études diverses. III. Recherches sur l'histoire Naturelle de l'Indo-Chine orientale. Paris, 1904, 4to, xxi + 550 pp., xxv pls.
Most of the contents are republication; but the excellent plates are new.
1012. *PAZOS Y CABALLERO, J.-H. Del exterior é interior del Mosquito. Apuntes sobre la anatomia y morfologia. Rev. medic. trop. 1903.
1013. PEARSALL, R. C. A review of our *Geometrid* classification. Canad. Ent. xxxvi, pp. 208-210, 342, 344. [*Lepidoptera*.]
1014. PECHLAUER, E. Zum Nestbau der *Vespa germanica*. Verh. Ges. Wien liv, pp. 77-79. [*Hymenoptera*.]
1015. PÉNEAU, J. Notules hémiptérologiques. Bull. Soc. Ouest France (2) iv, pp. 257-261.
1016. PENECKE, K. A. Ein neuer *Microsaurus* aus der Herzegowina. Wien. ent. Zeit. xxiii, p. 135. [*Colcoptera*.]
1017. PENZIG, O. Noterelle biologiche. I. Sopra una galla di *Toddalia aculeata* Pers. II. Un caso di simbiosi fra formiche e *Cicadelle*. Atti Soc. Ligustica xv, pp. 62-71, pls. i, ii.
1018. PÉREZ, C. Sur les *Phloea Hémiptères* mimétiques de Lichens. C.R. Soc. Biol. lvi, pp. 429, 430.
1019. —. Sur les sphères de granules dans la metamorphose des *Muscides*. T. c. pp. 781-783. [*Diptera*.]
1020. —. Digestion intra-cellulaire des sarcolytes dans l'histolyse nymphale des *Muscides*. T. c. pp. 992-994. [*Diptera*.]
1021. PÉREZ, J. Des effets des actions mécaniques sur le développement des œufs non fécondés du ver à soie. Pr.-verb. Soc. Sci. Bordeaux 1896/97, pp. 9, 10.
1022. —. Sur les Termites. T. c. 1895/96, pp. 65, 66.
1023. PERGANDE, T. North American *Phylloxerinae* affecting *Hicoria* (carya) and other trees. P. Davenport Ac. ix, pp. 185-273, pls. i-xxi. [*Aphidæ*.]
1024. —. On some of the *Aphides* affecting grains and grasses of the United States. Bull. U. S. Dep. Agric. Ent. xlv, pp. 5-23.
1025. —. *Aphididae* of the expedition. [in] Alaska viii, pp. 119-125.
This and the following are reprints of memoirs recorded in 1900.
1026. —. *Formicide* of the expedition. [in] Alaska ix, pp. 113-117. [*Hymenoptera*.]
1027. PÉRINGUEY, L. Descriptive catalogue of the *Coleoptera* of South Africa (*Lucanidae* & *Scurabeidae*). Tr. S. African Soc. xiii, pp. 1-293, pls. i-iv.

1028. [PÉRINGUEY, L.] Sixth contribution of the South African *Coleopterous* fauna. Description of new species of *Coleoptera* in the collection of the South African Museum. Ann. S. African Mus. iii, pp. 167-299, pl. xiii.
1029. —. Some new *Coleoptera* collected by Rev. Henri A. Junod at Shilouvane, near Leydsdorp, in the Transvaal. Nov. Zool. xi, pp. 448-450.
1030. PERKINS, R. C. L. History of the occurrence of the sugar-cane leaf-hopper, *Perkinsiella saccharicida* Kirkaldy in Hawaii. Revised edition Rep. exp. Stat. Hawaii 1904, pp. 43-66. [*Homoptera*.]
1031. PERRAUD, J. Sur la perception des radiations lumineuses chez les Papillons nocturnes et l'emploi des lampes-pièges. C.R. Ac. Sci. cxxxviii, pp. 992-994. [*Lepidoptera*.]
1032. —. Sur la perception des radiations lumineuses chez les Papillons nocturnes et l'emploi des lampes-pièges. C.R. Soc. Biol. lvi, pp. 619-691.
1033. PETERSEN, W. Über indifferente Charaktere als Artmerkmale. Biol. Centrbl. xxiv, pp. 423-431 and 467-473.
Relates to a review of his previous work by Jordan (cf. Zool. Rec. 1903) and includes that physiological considerations must be included in discussions as to the origin of species.
1034. —. Ueber *Dendrolinus pini* L. und *D. segregatus* Butl. (*Lepidoptera*, *Lasiocampidæ*). Rev. Russe Ent. iv, pp. 163-166.
1035. PETRI, K. Beschreibung einiger neuer *Lixus*-Arten. Wien. ent. Zeit. xxiii, pp. 65-77. [*Coleoptera*.]
1036. —. Bestimmungs-Tabelle der mir bekannt gewordenen Arten der Gattung *Lixus* Fab. aus Europa und den angrenzenden Gebieten. T. c. pp. 183-198. [*Coleoptera*.]
1037. —. Fünf neue *Lixus*-Arten. Ann. Mus. Hungar. ii, pp. 233-236. [*Coleoptera*.]
1038. PETRY, A. *Nepticula thuringiaca* n. sp. Ent. Zeit. Stettin lxx, pp. 179-181. [*Lepidoptera*.]
1039. —. Beschreibung neuer *Microlepidopteren* aus Korsika. T. c. pp. 242-254.
1040. —. Zwei neue *Gelechiiden* aus den Central-Pyrenäen. Deutsche ent. Zeitschr. Iris xvii, pp. 1-6. [*Lepidoptera*.]
1041. PEYERIMHOFF, P. DE. Description d'un nouveau *Silphide* cavernicole de l'Ardèche. Bull. Soc. ent. France 1904, pp. 185-187. [*Coleoptera*.]
1042. —. *Coléoptères* cavernicoles inédits recueillis dans les Basses-Alpes. T. c. pp. 201-203, and 214-216.
1043. —. Études sur le genre *Tychus* Leach. Abeille xxx, pp. 169-180. [*Coleoptera*.]
1044. —. La larve des Insectes Metabola et les idées de Fr. Brauer (Fin.). Feuille Natural. xxxiv, pp. 41-45.
1045. PHILIPTSCHENKO, J. Zur Anatomie der *Campodea staphylinus* Westw. Trudui St. Peterb. Obshch. xxxv, pp. 440-454 (in Russian); résumé in German pp. 455, 456.
1046. PHILLIPS, E. F. Variation in Bees.—a reply to Mr Lutz. Biol. Bull. vii, pp. 70-74.

- 1046A. [PHILLIPS, E. F.] The structure and development of the compound eye of the bee. *Amer. Natural.* xxxviii, pp. 520, 521. [*Hymenoptera.*]
1047. PHILPOTT, A. Notes on Southern *Lepidoptera*. *Tr. N. Zealand Inst.* xxxvi, pp. 161-170.
1048. PHISALIX, C. Recherches sur le venin d'Abeilles. *C.R. Ac. Sci.* cxxxix, pp. 326-329. [*Hymenoptera.*]
1049. —. Recherches sur le venin d'Abeilles. *C.R. Soc. Biol.* lvii, pp. 198-201. [*Hymenoptera.*]
1050. —. Recherches sur le venin des Abeilles. *Bull. Soc. ent. France* 1904, pp. 218-220.
1051. PIC, M. Sur les *Buprestides* principalement paléarctiques du Genera de Wytsman. *Bull. Soc. zool. France* xxix, pp. 135-138. [*Coleoptera.*]
1052. —. Description de *Coléoptères* nouveaux. *Naturaliste* 1904, pp. 56, 57, 103, 104.
1053. —. *Anthicoides* nouveaux des collections du Muséum de Paris. *Bull. Mus. Paris* 1904, pp. 119-122. [*Coleoptera.*]
1054. —. Description de deux *Ptinides* et d'un *Notoxus* faisant partie des collections du Muséum de Paris. *T. c.* pp. 226-228. [*Coleoptera.*]
1055. —. Un nouveau *Malacoderme* de l'Afrique Australe. *Bull. Soc. ent. France* 1904, p. 12. [*Coleoptera.*]
1056. —. Descriptions de *Coléoptères* nouveaux de Madagascar. *T. c.* pp. 72, 73.
1057. —. Description d'un *Anthicus* nouveau de l'Amérique méridionale. *T. c.* p. 118. [*Coleoptera.*]
1058. —. *Coléoptères* asiatiques nouveaux. *T. c.* pp. 287, 289.
1059. —. Description d'un *Cardiophorus* Eschsch. de Syrie. *T. c.* p. 298. [*Coleoptera.*]
1060. —. *Coléoptères* français nouveaux. *Echange* xx, p. 2.
1061. —. Notes et descriptions. *T. c.* pp. 2-4, 9-11. [*Coleoptera.*]
1062. —. *Coléoptères* africains nouveaux. *T. c.* pp. 11, 12.
1063. —. *Longicornes* paléarctiques nouveaux. *T. c.* pp. 17, 18. [*Coleoptera.*]
1064. —. Diagnoses de seize *Coléoptères* exotiques appartenant à diverses familles. *T. c.* pp. 18-20.
1065. —. Diagnoses de *Coléoptères* asiatiques provenant surtout de Siberia. *T. c.* pp. 25-27.
1066. —. Diagnoses de *Malacodermes* africains et américains. *T. c.* pp. 27-29. [*Coleoptera.*]
1067. —. Essai dichotomique sur les "*Eupactus*" Lec. et genres voisins du Brésil. *T. c.* pp. 31, 32, 36, 37. [*Coleoptera.*]
1068. —. Diagnoses de *Coléoptères* paléarctiques et exotiques. *T. c.* pp. 33-36.
1069. —. Sur divers *Lariidae* ou *Bruchidae* et *Urodon*. *T. c.* pp. 39, 40.
1070. —. Six *Anthicoides* nouveaux du Brésil. *T. c.* pp. 44, 45. [*Coleoptera.*]

1071. [PIC, M.] Descriptions d'un *Bryaxis* et de plusieurs *Malacodermes* ou *Rhynchophores*. Echange xx, pp. 49-51. [*Coleoptera*.]
1072. —. Diagnoses de divers *Coléoptères* d'Europe et Turquie d'Asie. T. c. pp. 57, 58.
1073. —. Diagnose d'un "*Clytus*" du mont Taurus. T. c. p. 65. [*Coleoptera*.]
1074. —. Nouveaux *Coléoptères* de l'Afrique australe. T. c. pp. 65, 66.
1075. —. *Coléoptères* nouveaux de la Turquie d'Asie. T. c. pp. 73, 74.
1076. —. Nouvelles espèces et variétés de *Coléoptères* paléarctiques. T. c. pp. 81, 82.
1077. —. Diagnoses ou descriptions abrégées de *Coléoptères* paléarctiques. T. c. pp. 89-94.
1078. —. Un *Anthicus* nouveau de la Somalie. Ann. Mus. Genova xli, p. 92. [*Coleoptera*.]
1079. —. Notes et diagnoses sur divers *Tychiini*. Bull. Soc. Autun xv, pp. 139-148. [*Coleoptera*.]
1080. PICARD, F. Note sur l'instinct du *Pompilus viaticus*. Feuille Natural. xxxiv, pp. 142-145.
1081. PICTET, A. Variations chez les papillons. Arch. Sci. Phys. Nat. (4) xvii, pp. 110-112.
1082. —. L'Instinct et le sommeil chez les Insectes. T. c. pp. 447-451.
1083. PIEPERS, M. Ueber die sogenannten "Schwanze" der Lepidoptera. Deutsche ent. Zeitschr. Iris xvi, pp. 247-285.
1084. — & SNELLEN. Énumération des *Lépidoptères Hétérocères* de Java. v. Fam. viii, *Lithosiidae*. Tijdschr. Ent. xlvii, pp. 136-167, pls. x, xi.
1085. — & —. Énumération des *Lépidoptères Hétérocères* de Java. iv. Fam. vii, *Syntomidae*. T. c. pp. 42-62.
1086. PIERCE, W. D. Some Hypermetamorphic Beetles and their Hymenopterous Hosts. Stud. Univ. Nebraska iv, pp. 153-190, 2 pls. [*Coleoptera*, *Hymenoptera*.]
1087. PIERRE, —. L'éclosion des œufs de *Lestes viridis*. Ann. Soc. ent. France 1904, pp. 477-484, pl. iv. [*Odonata*.]
1088. PLATEAU, F. A propos de la reproduction des Abeilles. [Letter.] Naturaliste 1904, p. 61.
1089. PLOTNIKOW, W. Über die Häutung und über einige Elemente der Haut bei den Insekten. Zeitschr. wiss. Zool. lxxvi, pp. 333-366, pls. xxi, xxii.
1090. * —. Über die Häutung der Insekten. Tagb. xi Versamml. Russ. Naturf. 1901.
In Russian, cf. Zeitschr. wiss. Zool. lxxvi, p. 364.
1091. POMERANTZEV, D. Notes biologiques sur les *Coléoptères* vivant sous les écorces et utiles dans la sylviculture. VII. Rev. Russe Ent. iv, pp. 85-89.
Entirely in Russian.
1092. POOL, C. J. C. *Aulonium sulcatum* Oliv. (*trisulcum* Fourc.). A species of Colydiid *Coleoptera* new to Britain. Ent. Rec. xvi, p. 310.

1093. POPPIUS, B. Drei neue Arten der Gattung *Tachinus* Grav. aus Ost-Sibirien. Ofv. Finska Forh. xlv, No. 13, 6 pp. [*Coleoptera*.]
1094. —. Neue paläarktische *Coleopteren*. T. c. No. 16, 14 pp.
1095. —. Ueber einige *Lathridiiden*. Medd. Soc. Faun. Fenn. 1902/03, pp. 84–91. [*Coleoptera*.]
1096. —. Neue palaearktische *Omaliden*. T. c. pp. 106–111. [*Coleoptera*.]
1097. PORRITT, G. T. List of Yorkshire *Lepidoptera*. London, 1904, 8vo, pp. xvi + 193–269 and Tr. Yorkshire Union 30.
1098. PORTA, A. Sulla filogenia degli *Scarabæidi* e dei *Curculionidi*. Atti Soc. Modena xxxv, pp. 1–6. [*Coleoptera*.]
1099. PORTER, C. E. Lista de los *Véspidos* di Chile, extractada del Genera insectorum de M. P. Wytsman i adicionada de notas. Revist. chilena viii, pp. 193–197. [*Hymenoptera*.]
1100. PORTEVIN, G. Remarques sur les Nécrophages du Muséum et description d'espèces nouvelles. Bull. Mus. Paris ix, pp. 329–336. [*Coleoptera*.]
1101. —. Contribution au catalogue des *Diptères* de Normandie. Feuille Natural. xxxiv, pp. 209–213. [*Syrphide*.]
1102. POUJADE, G. A. *Lépidoptères* recueillis par M. A. Pavie en Indo-Chine. Mission Pavie iii, pp. 222–251, pl. xii bis.
1103. POULTON, E. B. President's Address. P. ent. Soc. London 1904, pp. xcv.
“The bearing of the study of Insects upon the question, ‘Are acquired characters hereditary?’”
— [See also LEIGH (871), SANDERS (1206), and SAUNDERS (1214).]
1104. POWELL, B. P. The development of wings of certain beetles, and some studies of the origin of the wings of insects. J. N. York Ent. Soc. xii, pp. 237–243, pls. xi–xvii, and xiii, pp. 5–22. [*Coleoptera*.]
1105. POYNTON, J. W. Notes on an Insect found in some hot springs at Taupo. Tr. N. Zealand Inst. xxxvi, pp. 170–172. [*Diptera*.]
1106. PREISS, P. Neue *Cetoniden* aus Deutsch-Ostafrika. Jahrb. nassau. Ver. pp. 13–28, pl. i. [*Coleoptera*.]
1107. PRENANT, A. Questions relatives aux cellules musculaires. iv. Le substance musculaire. Arch. zool. exp. Notes 1904, pp. c–civ, and cxiii–cxvii, and cxix–cxxxviii.
1108. PROUT, L. B. Some recurrent phases of variation in the *Larentiida*. Entomologist 1904, pp. 151–156. [*Lepidoptera*.]
1109. PUEL, J. Description d'un *Anisodactylus* nouveau du Midi de la France. Bull. Soc. ent. France 1904, p. 160. [*Coleoptera*.]
1110. PÜNGELER, R. Neue palaearktische *Macrolepidopteren*. Deutsche ent. Zeitschr. Iris xvi, pp. 286–301, pl. vi.
1111. —. Neue *Macrolepidopteren* aus Centralasien. Soc. ent. xix, pp. 121, 122, 130, 131.
1112. QUAIL, A. Notes on *Cossidae*. Entomologist 1904, pp. 93–97, pl. v. [*Lepidoptera*.]

1113. [QUAIL, A.] On the tubercles of thorax and abdomen in first larval stage of *Lepidoptera*. T. c. pp. 269-271, pl. ix.
1114. RAFFRAY, A. Genera et Catalogue des *Pselaphides*. Ann. Soc. ent. France 1903, pp. 484-604, and 1904, pp. 1-476, 3 pls. Addenda t. c. pp. 635-658.
Includes also a very large number of new species.
1115. RAGUSA, E. Osservazioni su alcuni *Coleotteri* di Sicilia, notati o omessi nel nuovo Catalogo dei *Coleotteri* d'Italia del Dott. Stefano Bertolini (Siena 1899). Natural. Sicil. xvii, pp. 1-9.
1116. RAINBOW, W. J. Notes on fleas parasitic on the Tiger cat. Rec. Austral. Mus. v, pp. 53-55. [*Aphaniptera*.]
1117. ——. A new "bat tick." T. c. pp. 78, 79, pl. ix. [*Diptera*.]
1118. ——. The mating of *Cyclochila australasie* Dou. and *Thopha saccata* Amyot. T. c. pp. 116, 117. [*Homoptera*.]
1119. ——. Note on *Cicindela jungi* and descriptions of two new beetles. T. c. pp. 245-247. [*Coleoptera*.]
1120. RAYNOR, G. H. & DONCASTER, L. Experiments on heredity and sex determination. Rep. Brit. Ass. 1904, p. 594.
1121. REBEL, H. Zwei neue *Saturniiden* aus Deutsch-Ostafrika. Ann. Hofmus. Wien xix, pp. 64-69, pls. ii, iii. [*Lepidoptera*.]
1122. ——. Studien über die *Lepidopteren*fauna der Balkanländer. II Teil. Bosnien und Herzegowina. T. c. pp. 97-377, pls. iv, v.
1123. REED, E. C. Los *Dípteros* pupáparos de Chile. Revist. chilena viii, pp. 149-153.
1124. RÉGIMBART, M. *Dytiscides* et *Gyrinides* recueillis au Vénézuéla et à la Guyane par M. F. Geay et faisant partie des collections du Muséum d'Histoire naturelle. Bull. Mus. Paris 1904, pp. 224-226. [*Coleoptera*.]
1125. ——. *Dytiscidæ* et *Gyrinidæ* recueillis par Mr L. Fea en Afrique occidentale. Ann. Mus. Genova xli, pp. 65-68. [*Coleoptera*.]
1126. REH, L. Zur naturgeschichte mittel- und nordeuropäischer Schildläuse (conclusion). Allg. Zeitschr. Ent. ix, pp. 12-36. [*Coccidæ*.]
1127. ——. Verbreitung und Nährpflanzen einiger *Diaspinen*. T. c. pp. 171-178. [*Coccidæ*.]
1128. REHN, J. A. G. Studies in Old world *Forficulids* or earwigs, and *Blattids* or Cockroaches. P. U. S. Mus. xxvii, No. 1363, pp. 539-560. [*Orthoptera*.]
1129. ——. Studies in American *Mantids* or soothsayers. T. c. No. 1364, pp. 561-574. [*Orthoptera*.]
1130. ——. Studies in the *Orthopterous* family *Phasmidæ*. P. Ac. Philad. lvi, pp. 38-107.
1131. ——. Notes on *Orthoptera* from Northern and Central Mexico. T. c. pp. 513-549.
1132. ——. Notes on *Orthoptera* from Arizona. New Mexico, Colorado. T. c. pp. 562-575.
1133. ——. Studies in the *Orthopterous* subfamilies *Acrydiinæ* (*Tettiginæ*), *Eumastacinæ* and *Proscopinæ*. T. c. pp. 658-683.

1134. [REHN, J. A. G.] & HEBARD, M. The *Orthoptera* of Thomas county Georgia, and Leon county Florida. T. c. pp. 774-802.
1135. —. A new species of roach of the genus *Kakerlac* (*Loboptera* auct.) from Southern Texas. Psyche xi, p. 72. [*Orthoptera*.]
1136. —. A new *Mantis* of the genus *Stagmatoptera* from Nicaragua. Canad. Ent. xxxvi, p. 107. [*Orthoptera*.]
1137. —. A new *Melanoplus* from New Jersey. Ent. News Philad. xv, p. 85. [*Orthoptera*.]
1138. —. A new roach of the genus *Chorisoneura* from South Carolina. T. c. p. 164. [*Orthoptera*.]
1139. —. Two new species of North American *Stenopalmatinae*. T. c. pp. 280-282. [*Orthoptera*.]
1140. REICHENAU, W. VON. Einiges über die *Macrolepidopteren* unseres "Gebietes unter Aufzählung sämtlicher bis jetzt beobachteter Arten, zugleich als Ergänzung von" die Schuppenflügler (*Lepidopteren*) des Klg. Reg.-Bezirks Wiesbaden und ihre Entwicklungsgeschichte von Dr Adolf Rössler. (Jahrbuch 1880 & 1881; Jahrgang 33 & 34.) Erster Teil: Die Tafgalter, Schwärmer und spinner. Jahrb. nassau. Ver. lvii, pp. 107-167.
1141. REITTER, E. Uebersicht der mir bekannten palaearktischen Arten der *Coleopteren*-Gattung *Dicerca* Eschsch. Wien. ent. Zeit. xxiii, pp. 21-24.
1142. —. Ein neuer *Bathyscia* aus der Herzegowina. T. c. p. 26. [*Coleoptera*.]
1143. —. *Coleopterologische* Notizen. T. c. pp. 24, 25, 83, 84, 259, 260.
1144. —. Ueber neue und wenig gekannte *Histeriden*. T. c. pp. 29-36. [*Coleoptera*.]
1145. —. Eine neue *Mycetaciden*-Gattung aus Italien. T. c. pp. 41, 42. [*Coleoptera*.]
1146. —. *Alexia maritima* n. sp. T. c. p. 45. [*Coleoptera*.]
1147. —. *Pselaphus globiventris* n. sp. T. c. p. 46. [*Coleoptera*.]
1148. —. Bestimmungstabelle der *Coleopteren*-Gattung *Cionus* Clairv. Aus Europa und den angrenzenden Ländern. T. c. pp. 47-64.
1149. —. Über vier *Coleopteren* aus der palaearktischen Fauna. T. c. pp. 81, 82.
1150. —. Analytische Revision der *Coleopteren*-Gattung *Eusomus* Germ. T. c. pp. 86-91.
1151. —. Drei neue *Coleopteren* aus Europa. T. c. pp. 147, 148.
1152. —. Sechzehn neue *Coleopteren* aus Europa und den angrenzenden Ländern. T. c. pp. 151-160.
1153. —. Übersicht über die mit *M. piceus* F. zunächst verwandten *Mycetophagus*-Arten aus Europa und den angrenzenden Ländern. T. c. pp. 165, 166. [*Coleoptera*.]
1154. —. Ein neuer blinder *Brachynus* aus Deutsch-Ostafrika. T. c. p. 178. [*Coleoptera*.]
1155. —. Sechs neue *Coleopteren* aus der palaearktischen Region. T. c. pp. 255-258.

1156. [REITTER, E.] Neue Arten des *Coleopteren*-Genus *Athous* Esch. aus Spanien. Bol. Soc. espan. iv, pp. 236-240.
1157. REITZENSTEIN, W. v. Untersuchungen über die Entwicklung der Stirn- und Augen von *Periplaneta orientalis* und *Cloëon*. Zool. Jahrb. Anat. xxi, pp. 161-180, pls. ix, x.
1158. REUTER, E. Bidrag till kännedom om *Microlepidopter*-faunan Ålands och Åbo Skärgårdar. II. Acta Soc. Faun. Fenn. xxvi, No. 1, 66 pp.
1159. —. Två för Finland nya *Coccider*. Medd. Soc. Faun. Fenn. 1902-03, pp. 66, 67.
1160. —. Für die finländische Fauna neue Schmetterlinge. T. c. pp. 147-162. [*Lepidoptera*.]
1161. REUTER, O. M. Neue Beiträge zur Kenntniss der *Copeognathen* Finnlands. Acta Soc. Faun. Fenn. xxvi, No. 9, 26 pp., 3 pls. [*Psocidæ*.]
1162. —. Uebersicht der paläarktischen *Stenodema*-Arten. Ofv. Finska Forh. xlv, No. 15, 21 pp. [*Heteroptera*.]
1163. —. Bemerkungen übereinige *Phimodera*-Arten. T. c. No. 17, 15 pp. [*Heteroptera*.]
1164. —. *Capsidæ persicæ* a Do. N. A. Zarudny collectæ, enumeratæ novæque species descriptæ. Annuaire Mus. St. Petersb. ix, pp. 5-16. [*Hemiptera*.]
1165. —. *Capsidæ duæ* (*Hemiptera-Heteroptera*) e Corea. Rev. Russe Ent. iv, pp. 34-36.
1166. —. Description of a new species of the genus *Globiceps* [*Capsidæ*] from Spain. Ent. Mag. xl, p. 51. [*Hemiptera*.]
- 1166A. —. *Capsidæ* ex Abyssinia et regionibus confinibus enumeratæ novæque species descriptæ. Ofv. Finska Forh. xlv, No. 6, 18 pp., 1 pl. [*Hemiptera*.]
- 1166B. —. *Capsidæ chinenses* et thibetanæ hactenus cognitæ enumeratæ novæque species descriptæ. T. c. No. 16, 23 pp., pl. ii. [*Hemiptera*.]
1167. —. *Capsidæ novæ rossicæ*. II. Op. cit. xlv, No. 4, 17 pp. [*Hemiptera*.]
1168. —. Ad cognitionem *Capsidarum* æthiopicarum. T. c. No. 10, 8 pp. [*Hemiptera*.]
1169. —. *Capsidæ palæarcticæ* novæ et minus cognitæ. T. c. No. 14, 18 pp. [*Hemiptera*.]
1170. RIBAGA, C. Attività del *Novius cardinalis* Muls. contro l'*Icerya purchasi* Mask. in Italia. Osservazioni sulla Biologia del *Novius cardinalis*. Riv. Patol. Veg. x, pp. 299-323.
1171. —. Sul genere *Ectopsocus* MacLachl. e descrizione di una nuova varietà dell' *Ectopsocus briggsi* MacLachl. Redia i, pp. 294-298.
1172. RICARDO, Miss G. Notes on the smaller genera of the *Tabaninæ* of the family *Tabanidæ* in the British Museum collection. Ann. Nat. Hist. xiv, pp. 349-372. [*Diptera*.]
1173. RILEY, W. A. The embryological development of the skeleton of the head of *Blatta*. Amer. Natural. xxxviii, pp. 777-810. [*Orthoptera*.]

1174. RIPPON, H. F. *Icones Ornithopterorum*, part 17, 10 pp., 4 pls. [*Lepidoptera*.]
1175. RIS, F. Ein unbekanntes Organ der *Phryganiden Oecetis notata* und *Oe. testacea*. Vierteljahrschr. Ges. Zurich xlix, pp. 370-374, pl. xii. [*Trichoptera*.]
1176. —. *Odonaten*. Hamburg. Magalhaen. Reise vii, 44 pp.
1177. RIVERA, M. J. El bruco de las arvejas (*Bruchus pisi*). Revist. chilena viii, pp. 25-42. [*Coleoptera*.]
1178. —. Biología de dos Coleópteros chilenos cuyas larvas atacan al trigo. T. c. pp. 241-254.
1179. RÖBER, J. Neue Schmetterlinge. Soc. ent. xix, pp. 105, 106. [*Lepidoptera*.]
1180. —. Neue *Caligo*-Arten. T. c. pp. 145, 146. [*Lepidoptera*.]
1181. ROBERTSON, C. Synopsis of *Anthophila*. Canad. Ent. xxxvi, pp. 37-43. [*Hymenoptera*.]
1182. —. Synopsis of *Prosopis* and *Colletes*, with supplementary notes and descriptions. T. c. pp. 273-278. [*Hymenoptera*.]
1183. ROCQUIGNY-ADANSON, G. DE. Expériences et observations sur la chenille processionnaire du pin. Feuille Natural. xxxiv, pp. 186, 187. [*Lepidoptera*.]
1184. ROGERS, L. Note on the rôle of the horse-fly in the transmission of Trypanosoma infection. Brit. Med. J. 1904, ii, pp. 1454, 1455.
1185. RÖHLER, E. Die antennalen Sinnesorgane von *Tryxalis*. Zool. Anz. xxviii, pp. 188-192. [*Orthoptera*.]
1186. ROMAN, A. Några svenska *Ichneumonid*-fynd. Ent. Tidskr. xxv, pp. 115-120. [*Hymenoptera*.]
1187. —. Sibirische *Ichneumonen* im schwedischen Reichsmuseum. T. c. pp. 138-150. [*Hymenoptera*.]
1188. ROSS, H. Die Gallenbildungen (Cecidien) der Pflanzen, deren Ursachen, Entwicklung, Bau und Gestalt. Ein Kapitel aus der Biologie der Pflanzen. Stuttgart, 1904, 8vo, 39 pp., 52 figg. and 1 pl.
1189. RÖSSIG, H. Von welchen Organen der Gallwespenlarven geht der Reiz zur Bildung der Pflanzengalle aus? Zool. Jahrb. Syst. xx, pp. 19-90, pls. iii-vi.
Untersuchung der Drüsenorgane der Gallwespenlarven, zugleich ein Beitrag zur postembryonalen Entwicklung derselben.
Abstract by HEYMONS, Zool. Zentrbl. 1905, pp. 101-103.
1190. ROSSUM, A. J. VAN. Levensgeschiedenis van *Cimbex fagi* Zadd. Tijdschr. Ent. xlvii, pp. 69-98, pls. iii-v. [*Hymenoptera*.]
1191. ROTHSCHILD, Hon. N. C. Further contributions to the knowledge of the *Siphonaptera*. Nov. Zool. xi, pp. 602-653, pls. vii-xvi.
1192. —. New species of *Siphonaptera* from Egypt. Entomologist 1904, pp. 1-4, pls. i, ii.
1193. —. Description of a new species of *Siphonaptera* from S. America. Revist. chilena viii, p. 147.
1194. ROTHSCHILD, Hon. W. *Lepidoptera* from British New Guinea, collected by Mr A. S. Meek. Nov. Zool. xi, pp. 310-322, pls. ii, iii.

1195. [ROTHSCHILD, Hon. W.] New *Sphingidæ*. T. c. pp. 435-440. [*Lepidoptera*.]
1196. —. A new African *Metanitis*. T. c. p. 451. [*Lepidoptera*.]
1197. —. New forms of butterflies. T. c. pp. 452-455. [*Lepidoptera*.]
1198. —. Two new *Saturniidaæ*. T. c. p. 601. [*Lepidoptera*.]
1199. —. A new subspecies of *Troides victoriæ*. T. c. p. 654. [*Lepidoptera*.]
1200. ROUBAUD, —. Sur les larves marines de *Dolichopodes* attribuées au genre *Aphrosylus* (Wlkr.). Bull. Mus. Paris ix, pp. 338-340. [*Diptera*.]
1201. ROVARA, F. A mezőgazdasági káros rovarokról. Verh. Ver. Presburg 1903, pp. 51-70.
1202. RUZSKY, M. Ueber die Ameisenfauna des Kaukasus und der Krim. Protok. Kazan. Univ. 1902-1903, No. 206, 33 pp.
1203. SAHLBERG, J. Entomologiska forskningsresor i Medelhafstrakterna och Centralasien företagna åren 1895-1896 samt 1898-1899. Ofv. Finska Forh. xlv, No. 1, pp. 1-38.
Reseberättelse III. Resor i Caucasiën, Transcaspien och Turkestan.
1204. —. Nykomlingar till Finlands insektfauna. Medd. Soc. Faun. Fenn. 1902-1903, pp. 77-80. [*Coleoptera*, *Hymenoptera*.]
1205. SAMBON, L. W. The transmission of sleeping sickness by Flies of the genus *Glossina*. Brit. Med. J. 1904, i, pp. 696, 697.
1206. SANDERS, CORA B. On the *Lepidoptera Rhopalocera* collected by W. J. Burchell in Brazil, 1825-1830. Ann. Nat. Hist. xiii, pp. 305-323, 356-371, pl. vi.
Includes much matter by POULTON.
1207. SANDERS, J. G. Three new Scale insects from Ohio. Ohio Natural. iv, pp. 94-98, pl. viii. [*Coccidæ*.]
1208. —. The *Coccidæ* of Ohio. P. Ohio Ac. iv, pp. 27-80, 9 pls.
1209. SANDERSON, E. D. Insects mistaken for the Mexican Cotton Boll weevil. Bull. Texas Agric. exp. Stat. No. 74, 12 pp.
1210. —. The cotton boll weevil in Texas. Texas Agric. exp. Stat. Circular 3. [*Coleoptera*.]
1211. *SASAKI, C. On the feeding of the silkworms with the leaves of wild and cultivated Mulberry-trees. Bull. Agric. Tokyo Univ. vi, pp. 37-41.
Abstract, Allg. Zeitschr. Ent. ix, p. 358.
1212. SAUBER, A. Die Kleinschmetterlinge. Hamburgs und der Umgebung. Verh. Ver. Hamburg. Unterh. xii, pp. 1-60. [*Lepidoptera*.]
1213. —. Zwei neue palaearktische *Microlepidopteren* aus Centralasien. T. c. pp. 108, 109.
1214. SAUNDERS, E. *Hymenoptera aculeata* from Majorca (1901) and Spain (1901-2) with introduction, notes and appendix by E. B. POULTON. Tr. ent. Soc. London 1904, pp. 591-665.
1215. —. Aculeate *Hymenoptera*, collected in Tenerife by the Rev. A. E. Eaton, M.A., in the spring of 1904, with descriptions of new species. Ent. Mag. xl, pp. 200-203, 229-234.
1216. —. Two new British species of Aculeate *Hymenoptera*. T. c. pp. 10, 11.
1904. [VOL. XLI.]

1217. [SAUNDERS, E.] *Halictus fulvicornis* Kirb., distinct from *H. frey-gessneri* = *subfasciatus* Nyl. T. c. p. 250. [*Hymenoptera*.]
1218. SAUSSURE, H. DE, ANDRÉ, E. & DU BUYSSON, R. *Hyménoptères* recueillis par M. A. Pavie. Mission Pavie iii, pp. 188-203, pl. xii.
1219. *SAWAMURA, S. Investigations on the digestive enzymes of some *Lepidoptera*. Bull. Coll. Agric. Tokyo iv, pp. 337-347.
Brief abstract, Entomologist 1904, p. 11.
1220. SCHAEFFER, C. New genera and species of *Coleoptera*. J. N. York Ent. Soc. xii, pp. 197-236.
1221. SCHAPOSCHNIKOV, C. G. Notes sur les *Mucrolépidoptères* de la partie centrale du Caucase septentrional-occidental. Annuaire Mus. St. Petersb. ix, pp. 189-259.
In Russian.
1222. —. Eine neue Erklärung der roten Färbung im Hinterflügel bei *Catocala* Schr. Biol. Centrbl. xxiv, pp. 514-520.
1223. SCHATZMAYR, A. Drei neue Arten der Kärntner *Koleopteren*-Fauna. München. Kol. Zeitschr. ii, pp. 210-214.
1224. SCHAUDINN, F. Generations- und Wirtswechsel bei *Trypanosoma* und *Spirochaete*. (Vorläufige Mitteilung.) Arb. Kaiserl. Gesundheitsamte xx, pp. 387-439. [*Diptera*.]
Proboscis and feeding of *Culex*. Cf. LEON (874, 875).
1225. SCHAUS, W. New species of American *Heterocera*. Tr. Amer. ent. Soc. xxx, pp. 135-178.
1226. SCHENKLING, S. Die *Cleridengattung* *Phlaeocopus* Guér. Ann. Mus. Genova xli, pp. 169-186. [*Coleoptera*.]
1227. SCHILSKY, J. Diagnosen neuer *Urodon*-Arten. Wien. ent. Zeit. xxiii, p. 78. [*Coleoptera*.]
1228. SCHMIDT, E. Beitrag zur Kenntniss der *Flatiden* von Sumatra. Stettin Ent. Zeit. lxxv, pp. 182-212. [*Homoptera*.]
1229. —. Neue und bemerkenswerthe *Flatiden* des Stettiner Museums. T. c. pp. 354-380. [*Homoptera*.]
1230. SCHMIDT, R. Ueber eine neue *Thorictus*-Art aus Ost-Buchara. Annuaire Mus. St. Petersb. viii, p. 389. [*Coleoptera*.]
1231. SCHMIEDEKNECHT, O. Opuscula Ichneumonologica. Fasc. v-vii, pp. 321-562. [*Hymenoptera*.]
1232. SCHNEE, P. Die Landfauna der Marschall-Inseln nebst *einigen* Bemerkungen zur Fauna der Insel Nauru. Zool. Jahrb. Syst. xx, pp. 387-412.
Includes description of a new *Chrysopa* by KEMPNY.
1233. SCHNEIDER, G. *Anopheles claviger* Fabr. im Winter und Sommer. KB. Ver. Riga xlvii, pp. 41-45. [*Diptera*.]
1234. SCHÖTT, H. Études sur les *Collemboles* du Nord. Bih. Svenska Ak. xxviii, Afd. iv, No. 2, 48 pp., vi pls.
Overlooked in 1902.
1235. SCHOUTEDEN, H. *Hemiptera* africana. II. *Pentatomidae*. Ann. Soc. ent. Belgique xlviii, pp. 135-144.
1236. —. Descriptions de *Scutellériens* nouveaux ou peu connus (*Pentatomides*). T. c. pp. 296-303. [*Hemiptera*.]

1237. [SCHOUTEDEN, H.] *Pentatómidos de la Guinea española*. Mem. Soc. Espan. i, pp. 141-160. [*Hemiptera*.]
1238. —. Faune entomologique de l'Afrique tropicale. *Rhynchota aethiopica*. I. *Scutellerinae* et *Graphosomatinae*. [Forms part of Ann. Mus. Congo, called also Ann. Mus. Tervueren.] pp. 1-131, pls. i, ii; also 12 unnumbered pages.
1239. —. *Heteroptera* fam. *Pentatomidae*, subfam. *Scutellerinae*. Wytsman Gen. Ins. fasc. xxiv, 98 pp., 5 pls.
1240. —. *Aphiden*. Hamburg. Magalhæn. Reise vii, 6 pp.
1241. SCHRÖDER, C. Eine Sammlung von Referaten neuerer Arbeiten über aussereuropäische, namentlich nordamerikanische Insekten-schädlinge und ihre Bekämpfung. Allg. Zeitschr. Ent. ix, pp. 60-93.
1242. —. Eine Sammlung von Referaten neuerer Arbeiten über die geschlechtsbestimmenden Ursachen, mit einzelnen kritischen Anmerkungen. T. c. pp. 110-126.
1243. —. Kritische Beiträge zur Mutations-, Selektions-, und zur Theorie der Zeichnungsphylogenie bei den *Lepidopteren*. T. c. pp. 215-223, 249-257, 281-297.
1244. —. Eine Sammlung von Referaten über neuere biometrische Arbeiten, mit einzelnen Anmerkungen. T. c. pp. 228-246.
1245. SCHROTTKY, C. Beitrag zur Kenntnis einiger südamerikanischer *Hymenopteren*. Allg. Zeitschr. Ent. ix, pp. 344-349.
1246. SCHULTHESS-RECHBERG, A. v. Beiträge zur Kenntnis der *Nortonia*-Arten. Zeitschr. Hym. Dipt. iv, pp. 270-283. [*Hymenoptera*.]
1247. SCHULTZ, O. Gynandromorphe (hermaphroditische) *Macrolepidopteren* der palaearctischen Fauna. iv. Berlin. ent. Zeitschr. xlix, pp. 71-116.
1248. —. Ueber einige Aberrationen aus dem Genus *Parnassius* Latr. T. c. pp. 274-281, pl. iii. [*Lepidoptera*.]
1249. —. Über einige in Schlesien gefangene interessante *Lepidopteren*-Aberrationen aus den Gattungen *Apatura* F. und *Limenitis* F. Abh. Ges. Grlitz xxiv, pp. 129-136.
1250. —. Einige nordische Tagfalter-Formen. T. c. pp. 137-140. [*Lepidoptera*.]
1251. —. Übersicht über die bisher bekannt gewordenen Fälle von Gynandromorphismus bei paläarktischen *Macrolepidopteren*, nach Familien, Gattungen und Species. Allg. Zeitschr. Ent. ix, pp. 304-310.
1252. SCHULTZE, A. Zwei neue paläarktische *Baris*-Arten. München. Kol. Zeitschr. ii, pp. 36-38. [*Coleoptera*.]
1253. SCHULZ, W. A. *Hymenopteren* Amazoniens. SB. Ak. München 1903, pp. 757-832, pl. i.
1254. —. Ein Beitrag zur Faunistik der paläarktischen *Spheciden*. Zeitschr. Ent. Breslau xxix, pp. 90-102. [*Hymenoptera*.]
1255. —. Ein Beitrag zur Kenntniss der papuanischen *Hymenopteren*-Fauna. Berlin. ent. Zeitschr. xlix, pp. 209-239.
1256. —. *Dipteren* als Ektoparasiten an südamerikanischen Tagfaltern. Zool. Anz. xxviii, p. 42.

1257. SCHUSTER, L. Der Pappelspinner (*Leucoma salicis* L.). Zool. Garten xlv, pp. 65-68. [*Lepidoptera*.]
1258. —. *Lepidopterologische* Notizen I. T. c. pp. 283-286.
1259. SCHWANGART, F. Studien zur Entodermfrage bei den *Lepidopteren*. Zeitschr. wiss. Zool. lxxvi, pp. 167-212, pls. xii, xiii.
1260. SCHWARZ, E. A. The insect-catching grass of Cuba. Science xx, pp. 761, 762.
1261. —. The cotton-boll weevil in Cuba. P. ent. Soc. Washington vi, pp. 13-17. [*Coleoptera*.]
1262. —. A new *Coccinellid* enemy of the San Jose Scale. T. c. p. 118. [*Coleoptera*.]
1263. —. Notes on North American *Psyllidæ*. Part I. T. c. pp. 234-245.
1264. —. *Coleoptera* of the expedition. [in] Alaska viii, pp. 169-185. A reprint of a memoir recorded in 1900.
1265. SCHWARZ, O. Neue *Elateriden* aus Süd-Amerika. Deutsche ent. Zeitschr. 1904, pp. 49-80. [*Coleoptera*.]
1266. —. Diagnosis of a new species of *Elateridæ* in the Colombo Museum. Spolia Zeylan. ii, p. 46. [*Coleoptera*.]
1267. SCUDDER, S. H. & COCKERELL, T. D. A. A first list of the *Orthoptera* of New Mexico. P. Davenport Ac. ix, pp. 1-60, pls. i-iv.
1268. SEIDLITZ, G. Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1902. Allgemeines und *Coleoptera*, pp. 1-290.
Published as a separate work, but taken from Arch. Naturg. 1904.
1269. SELLARDS, E. H. Some new structural characters of palaeozoic cockroaches. Amer. J. Sci. xv, pp. 307-315, pls. vii, viii. [*Orthoptera*.]
1270. —. A study of the structure of palaeozoic cockroaches, with descriptions of new forms from the coal measures. Op. cit. xviii, pp. 112-134, 213-227, pl. i. [*Orthoptera*.]
1271. SELYS LONGCHAMPS, M. DE. Recherches sur le développement embryonnaire de l'appendice du premier segment abdominal chez *Tenebrio molitor*. (Communication préliminaire.) Bull. Ac. Belgique 1904, pp. 413-447, 1 pl.
1272. SEMENOW, A. Synopsis *Elaphrorum* palæarcticorum subgeneris *Elaphroteri* Sem. gregem *El. riparii* (L.) efficientium. *Coleoptera, Carabidæ*. Rev. Russe Ent. iv, pp. 19-22.
1273. —. Analecta *Coleopterologica*. VI. T. c. pp. 37-39. VII. T. c. pp. 119-121. VIII. T. c. pp. 201, 202.
1274. —. Notice nécrologique sur T. S. Tschitschérine. (Avec portrait.) T. c. pp. 69-76.
1275. —. De duabus novis speciebus generis *Stomis* Clairv. e Transcaucasia (*Coleoptera, Carabidæ*). T. c. pp. 152, 153.
1276. —. De nova specie generis *Haliplus* Latr. e Rossia europæa. (*Coleoptera, Haliplidæ*.) T. c. p. 216.
1277. —. Sur la position dans le système des *Pulicidæ* (*Aphaniptera* s. *Siphonaptera* auctorum). T. c. pp. 277-288.

1278. [SEMENOW, A.] *Novæ Coleopterorum formæ e Sibiria*. T. c. pp. 289-291.
1279. —. K' phaunye nasyekom'ikh' ostrova kolgheva. *Horæ Soc. ent. Ross.* xxxvii, pp. 116-126.
Coleoptera North Russia: includes a description by TSCHITSCHERIN.
1280. —. Synopsis præcursoria generum et specierum subtribum *Stomini efficientium (Coleoptera, Carabidæ)*. T. c. pp. 187-193.
1281. —. Dopolnitel'naya zamyetka o vidakh roda *Nyctiphantus* Sem. (*Coleoptera, Chrysomelidæ*). T. c. pp. 194-196.
1282. SEMICHON, L. Sur l'épithélium de l'intestin moyen de quelques Mellifères. *Bull. Mus. Paris* ix, pp. 365-368.
1283. —. Sur la ponte de la *Melecta armata* Panzer. *Bull. Soc. ent. France* 1904, pp. 188, 189. [*Hymenoptera*.]
- SEVERIN, H. [See MARSHALL & SEVERIN (917).]
1284. SHARP, D. The stridulation of *Passalidæ*. *Ent. Mag.* xl, pp. 273, 274. [*Coleoptera*.]
1285. —. Description of a new genus and species of *Coleoptera* (Fam. *Hispidæ*) from New Britain. *P. Linn. Soc. N. S. Wales* xxviii, pp. 924, 925.
- 1285A. —. *Insecta*. *Zool. Rec.* 1903, 373 pp.
 —. [See also MUIR & SHARP (969).]
1286. SHARPE, EMILY M. On new species of butterflies from Equatorial Africa. *Entomologist* 1904, pp. 131-134. [*Lepidoptera*.]
1287. —. Descriptions of new *Lepidoptera* from Equatorial Africa. T. c. pp. 181-183.
1288. —. Descriptions of new *Lycænidæ* from Equatorial Africa. T. c. pp. 202-204. [*Lycænidæ*.]
1289. SHELFORD, R. W. C. A list of the butterflies of Borneo with descriptions of new species. Part i. *Danainæ* to *Amathusiinæ*. *J. Straits Asiat. Soc.* xli, pp. 81-111. [*Lepidoptera*.]
1290. —. A note on *Elymnias borneensis* Wall. *Tr. ent. Soc. London* 1904, pp. 487-489. [*Lepidoptera*.]
1291. SHIPLEY, A. E. The Orders of Insects. *Zool. Anz.* xxvii, pp. 259-262.
1292. SIEBER, N. & METALNIKOW, S. Ueber Ernährung und Verdauung der Bienenmotte (*Galleria mellonella*). *Arch. ges. Physiol.* cii, pp. 269-286.
1293. SILFVENIUS, A. J. Über die Metamorphose einiger *Hydropsychiden*. II. *Acta Soc. Faun. Fenn.* xxvi, No. 2, pp. 1-13, 1 pl. [*Trichoptera*.]
1294. —. Über die Metamorphose einiger *Hydroptiliden*. T. c. No. 6, 38 pp., 2 pls. [*Trichoptera*.]
1295. —. Ein Fall von Schädlichkeit der *Trichopterenlarven*. *Medd. Soc. Faun. Fenn.* 1902/03, pp. 54-57.
1296. —. *Trichopterenlarven* in nicht selbstverfertigten Gehäusen. *Allg. Zeitschr. Ent.* ix, pp. 147-150.

1297. SILVESTRI, F. *Thysanura*. Fauna Hawaiiensis iii, pp. 293-297, pl. viii.
1298. —. Contribuzioni alla conoscenza dei Mirmecofili. I. Osservazioni su alcuni mirmecofili dei diutorni di Portici. Ann. Mus. Napol (n. s.) i, No. 13, 5 pp.
1299. —. Resultati di uno studio biologico sopra i *Termitidi* sud-americani. Mem. Soc. Alzate xiii, pp. 353-378.
1300. —. Nuovi generi e specie di *Machilidae*. Redia ii, pp. 4-9. [*Thysanura*.]
1301. SJÖSTEDT, Y. Monographie der *Termiten* Afrikas. Nachtrag. Svenska Ak. Handl. xxxviii, No. 4, 120 pp., 4 pls.
1302. SKINNER, H. New *Meloidae* from Arizona. Ent. News Philad. xv, p. 217. [*Coleoptera*.]
1303. —. A new *Thecla* from the Northwest. T. c. p. 298. [*Lepidoptera*.]
1304. SLAVIČEK, J. Rozbor čmeláků a pačmeláků (*Bombus*, *Psithyrus*) českomoravských s poznámkami biologickými. Vestník. Klub. Prostějov iv, pp. 83-106, 1 pl.
Entirely in Bohemian; the plate, of ♂ genitalia, is poor.
1305. SLEVOGT, B. Haben Insekten Ortssinn? Soc. ent. xix, p. 37.
1306. SLINGERLAND, M. V. The grape leaf-hopper. Bull. Cornell Exp. Stat., No. 215, pp. 83-102.
1307. —. The grape-berry moth. Op. cit. No. 223, pp. 43-60. [*Lepidoptera*.]
1308. —. Insect photography. Bull. U. S. Dep. Agric. Ent. xlv, pp. 5-14.
1309. — & JOHNSON, F. Two grape pests. Bull. Cornell Exp. Stat. No. 224, pp. 65-73. [*Diptera*.]
1310. SLOANE, T. G. Studies in Australian entomology. No. xiv. New species of Geodephagous *Coleoptera* from tropical Australia. P. Linn. Soc. N. S. Wales xxix, pp. 527-538.
1311. —. Revisional notes on Australian *Carabidae*. Part I. Tribes *Carabini*, *Pamborini*, *Pseudozaenini*, *Clivinini*; and the genus *Nebriosoma*. Op. cit. 1904, pp. 699-733. [*Coleoptera*.]
1312. SMITH, J. B. Remarks on the catalogue of the *Noctuidae* in the collection of the British Museum. J. N. York Ent. Soc. xii, pp. 93-104, pl. iv. [*Lepidoptera*.]
1313. —. New *Noctuidae* for 1904. I. Canad. Ent. xxxvi, pp. 149-154. [*Lepidoptera*.]
1314. —. New species of *Noctuids* for 1904. No. 2. Psyche xi, pp. 54-60. [*Lepidoptera*.]
1315. —. Report of the New Jersey State Agricultural experiment Station upon the mosquitoes occurring within the State, their habits, life history, etc. Trenton, 1904, 8vo, 482 pp., 136 figg.
1316. —. Notes on some mosquito larvæ found in New Jersey. Ent. News Philad. xv, pp. 145-151, pls. ix-xii. [*Diptera*.]
1317. —. Notes on the life-history of *Culex dupreei* Coq. T. c. pp. 49-51, pl. vii. [*Diptera*.]

1318. [SMITH, J. B.] Report of the entomological department of the New Jersey Agric. Coll. exp. Stat. for year 1903, pp. 555-659.
1319. —. The mosquito investigation in New Jersey. Pop. Sci. Monthly lxvi, pp. 281-286.
1320. —. The New Jersey ideal in the study and report upon injurious insects. U. S. Dep. Agric. Bull. Exp. Stat. 142, 4 pp.
1321. —. Insecticide experiments for 1904. Bull. New Jersey Exp. Stat. No. 178, 8 pp.
1322. SNELLEN, P. C. T. Aanteekeningen over Nederlandsche *Lepidoptera* (Vervolg). Tijdschr. Ent. xlvii, pp. 226-268.
— [See also PIEFERS & SNELLEN (1084, 1085) & VAN DEVENTER (1428).]
1323. SNODGRASS, R. E. The hypopygium of the *Tipulidæ*. T. Amer. ent. Soc. xxx, pp. 179-236, pls. viii-xviii. [*Diptera*.]
1324. —. The hypopygium of the *Dolichopodidæ*. P. Calif. Ac. (3) iii, pp. 273-294, pls. xxx-xxxiii. [*Diptera*.]
1325. SNOW, F. H. Lists of *Coleoptera*, *Lepidoptera*, *Diptera*, and *Hemiptera* collected in Arizona by the entomological expeditions of the University of Kansas in 1902 & 1903. Kansas Univ. Sci. Bull. ii, No. 12, pp. 323-350.
1326. SOLARI, A. & F. *Curculionidi* della fauna paleartica. Note e descrizioni. Ann. Mus. Genova xli, pp. 525-538. [*Coleoptera*.]
1327. SPAETH, F. Zur Kenntnis der *Cassiden* des Ostindischen Archipels. Ann. Mus. Genova xli, pp. 69-79. [*Coleoptera*.]
1328. SPEISER, P. Besprechung einiger Gattungen und Arten der *Diptera Pupipara*. II. Ann. Mus. Hungar. ii, pp. 386-395.
1329. —. Typenuntersuchungen an *Hippobosciden*. Zeitschr. Hym. Dipt. iv, pp. 82-89. [*Diptera*.]
1330. —. Drei palaearktische *Hippobosciden*. T. c. pp. 177-180. [*Diptera*.]
1331. —. Studien über *Hippobosciden*. II. Ann. Mus. Genova xli, pp. 332-350. [*Diptera*.]
1332. —. Die *Hemipteren*-gattung *Polycenes* Gigl. und ihre Stellung in System. Zool. Jahrb. Suppl. vii, pp. 373-380, pl. xx.
1333. —. Eine Sammlung von Referaten über neuere Arbeiten aus dem Gebiete der Insektenfaunistik. Allg. Zeitschr. Ent. ix, pp. 185-206.
1334. STAMM, R. H. Om Musklernes Befæstelse til det ydre Skelet hos Leddýrene. Danske Selsk. Skr. (7) i, 2, pp. 127-164, 2 pls.
Résumé in French, pp. 160-163.
1335. STAUFFACHER, H. Das statische Organ bei *Chermes coccineus* Ratz. Allg. Zeitschr. Ent. ix, pp. 361-374. [*Aphidæ*.]
1336. STEBBING, E. P. On the life-history of a new *Monophlebus* from India, with a note on that of a *Vedatia* predaceous on it. With a few remarks on the *Monophlebinæ* of the Indian region. J. Linn. Soc. London xxix, pp. 142-161, pls. 16-18. [*Coccidæ*.]
1337. —. On the life-history and habits of the moth *Duomitus leucotus* Walker in Calcutta. J. Asiat. Soc. Bengal lxxiii, 2, pp. 25-30. [*Lepidoptera*.]

1338. [STEBBING, E. P.] Insect life in India and how to study it, being a simple account of the more important families of insects with examples of the damage they do to crops, tea, coffee and indigo concerns, fruit and forest trees in India. Chapter v. *Hymenoptera*. J. Bombay Soc. xvi, pp. 115-131.
1339. STEFANI-PEREZ, T. DE. Osservazioni e notizie sui *Culicidi siciliani*. Natural. Sicil. xvii, pp. 9-13, 43-48. [*Diptera*.]
1340. —. Noterelle sparse di Entomologia. T. c. pp. 124-128.
1341. STEGAGNO, G. I locatari dei Cecidozoi sin qui noti in Italia. Marcellia iii, pp. 18-53.
1342. STEIN, P. Die amerikanischen *Anthomyiden* des königlichen Museums für Naturkunde zu Berlin und des ungarischen National-Museums zu Budapest. Ann. Mus. Hungar. ii, pp. 414-495. [*Diptera*.]
1343. —. Einige neue javanische *Anthomyiden*. Tijdschr. Ent. xlvii, pp. 99-113. [*Diptera*.]
1344. STERNBERG, C. Zur Gattung *Aegopsis* Burmeister. Deutsche ent. Zeitschr. 1904, pp. 17-32. [*Coleoptera*.]
1345. STERZEL, —. Über einige neue Fossilreste. Ber. Ges. Chemnitz xv, pp. lxxix-lxxii. [*Blattidae*.]
1346. STICHEL, H. *Lepidoptera Rhopalocera*. Fam. *Nymphalidae*, Subfam. *Brassolinae*, pp. 48, pl. v. Wytsman Genera Insectorum, fasc. xx.
1347. —. Ueber die systematische Stellung der *Lepidopteren*-Gattungen *Hyantis* Hew. und *Morphopsis* Oberth. und den spezifischen Wert der benannten *Hyantis*-Formen. Berlin. ent. Zeitschr. xlix, pp. 303-313, pl. iv.
1348. —. *Brassolidarum novarum descriptio ad tempus proposita*. Ins. Börse 1904, pp. 6, 21. [*Lepidoptera*.]
1349. STITZ, H. Zur Kenntniss des Genitalapparats der *Trichopteren*. Zool. Jahrb. Anat. xx, pp. 277-314, pls. xvii-xix.
1350. STROBL, P. G. Ichneumoniden Steiermarks (und der Nachbarländer). Schluss. Mt. Ver. Steiermark xl, pp. 43-160. [*Hymenoptera*.]
1351. STRUCK, R. Beiträge zur Kenntnis der *Trichopteren*larven. II. Mt. Ges. Lubeck (2) xix, pp. 2-7.
1352. STSCHEKANOVZEW, J. P. Über die Eireifung bei viviparen *Aphiden*. Biol. Centrbl. xxiv, pp. 104-112.
1353. SUFFERT, E. Neue afrikanische Tagfalter aus dem Kön. Zool. Museum Berlin, und meiner Sammlung. Deutsche ent. Zeitschr. Iris xvii, pp. 12-107, pls. i-iii. [*Lepidoptera*.]
1354. —. Neue Tagfalter aus Deutsch-Ost-Africa. T. c. pp. 124-132. [*Lepidoptera*.]
1355. —. Eine neue *Lycenide* aus Deutsch-Ostafrika. Ins. Börse 1904, p. 134. [*Lepidoptera*.]
- 1355A. —. Neue *Nymphaliden* aus Africa. Deutsche ent. Zeitschr. Iris xvii, pp. 108-123. [*Lepidoptera*.]
1356. SURFACE, H. A. Special article: the apple-tree tent-caterpillar (*Clisiocampa americana*). Pennsylv. Dep. Agric. Bull. Zool. i, No. 11, pp. 35-51, pls. i-vii. [*Lepidoptera*.]

1357. SWENK, M. H. Two new *Colletes* from Costa Rica. Canad. Ent. xxxvi, pp. 76, 77. [*Hymenoptera*.]
1358. —. A new *Colletes*. Ent. News Philad. xv, p. 251. [*Hymenoptera*.]
— [See also VIERECK (1454).]
1359. SWEZEY, O. H. Observations on the life-history of *Liburnia campestris*, with notes on a *Hymenopterous* parasite infesting it. Bull. U. S. Dep. Agric. Ent. xlv, pp. 43-46.
1360. *—. Preliminary catalogue of the described species of the family of *Fulgoridæ* of North America, north of Mexico. Ohio Dep. Agric. Bull., No. 3, 1904.
1361. SWINHOE, C. New species of Eastern, Australian, and African *Heterocera* in the national collection. Tr. ent. Soc. London 1904, pp. 139-158.
1362. —. On the *Geometridæ* of tropical Africa in the national collection. T. c. pp. 497-590. [*Lepidoptera*.]
1363. —. New species of Indo-Australian and African *Heterocera*. Ann. Nat. Hist. xiv, pp. 131-134.
1364. —. On some new butterflies and moths from the East. T. c. pp. 417-424. [*Lepidoptera*.]
1365. SZÉPLIGETI, V. Sudamerikanische *Braconiden*. Ann. Mus. Hungar. ii, pp. 173-197. [*Hymenoptera*.]
1366. —. Espèces nouvelles d'*Ichneumonides* et de *Braconides* du Muséum d'histoire naturelle de Paris. Bull. Mus. Paris ix, pp. 336-338. [*Hymenoptera*.]
1367. —. *Hymenoptera* Fam. *Braconidæ* (Première partie). Wytzman Gen. Ins., fasc. xxii, xxiii, 253 pp., 3 pls.
— [See also MORICE & SZÉPLIGETI (959).]
1368. TAVARES, J. DE SILVA. Instrucciones sobre el modo de recoger y enviar las zoocecidas. Bol. Soc. espan. iv, pp. 119, 120.
1369. TAYLOR, G. W. A new genus and species belonging to the *Geometridæ*. Canad. Ent. xxxvi, pp. 255, 256. [*Lepidoptera*.]
1370. TEPPER, J. G. O. Descriptions of some new species of *Orthoptera* from North-western S. Australia. Tr. R. Soc. S. Austral. xxviii, pp. 162-167, pl. xxxii.
1371. THEOBALD, F. V. New *Culicidæ* from the federated Malay States. Entomologist 1904, pp. 12-15, 36-39, 77, 78, 111-113, 163-165, 211-213, 236-239. [*Diptera*.]
Most of the new species are described by Dr LEICESTER.
1372. —. Second report on economic zoology. British Museum (Natural history). London, 1904, iv+197 pp.
1373. —. Report on a collection of mosquitoes or *Culicidæ*, etc., from Gambia, and descriptions of new species. Liverpool School of Tropical medicine. Memoir x. Appendix, pp. i-xi, pls. vi, vii; included in Thompson Yates Lab. Rep. v, Part i. [*Diptera*.]
1374. —. A new *Culcid* from Senegal and notes on the species of Mosquitoes, etc. T. c. Part II, Mem. xi. Appendix, pp. i-iii. [*Diptera*.]
1375. —. The 'Dura' Aphis or 'Asal Fly' (*Aphis sorghi* nov. sp.) [in] BALFOUR, A. First Report Wellcome Research Laboratories at the Gordon Memorial College, Khartoum, pp. 43-45, 1 pl. [*Diptera*.]

1376. [THEOBALD, F. V.] The Mosquitoes of Egypt, the Sudan, and Abyssinia. T. c. pp. 62-83, 6 pls.
1377. THÉRY, A. Espèces nouvelles de *Buprestides* exotiques. Bull. Soc. ent. France 1904, pp. 73-75. [*Coleoptera*.]
1378. —. *Buprestides* récoltés par le Dr Horn à Ceylan. Ann. Soc. ent. Belgique xlviii, pp. 158-167. [*Coleoptera*.]
1379. THIEME, O. Neue Tagschmetterlinge aus der südamerikanischen Cordillere. Berlin. ent. Zeitschr. xlix, pp. 159, 160. [*Lepidoptera*.]
1380. —. Zwei neue weisse Arten *Lymanopoda*. T. c. pp. 161, 162. [*Lepidoptera*.]
1381. —. Zwei unbeschriebene *Euploeen* der Insel Nias. T. c. p. 163. [*Lepidoptera*.]
1382. THIENEMANN, A. Die Putzapparate der *Trichopteren*puppen. Zool. Anz. xxvii, pp. 724-728.
1383. —. Zur *Trichopteren*-Fauna von Tirol. Allg. Zeitschr. Ent. ix, pp. 209-215, 257-261.
1384. —. *Ptilocolopus granulatus* Pt., eine Übergangsform von den *Rhyacophiliden* zu den *Hydroptiliden*. T. c. pp. 418-424 & 437-441. [*Trichoptera*.]
1385. THIERRY-MIEG, P. Descriptions de *Lépidoptères* nouveaux. Naturaliste 1904, pp. 140, 141 & 182, 183.
1386. THURAU, F. *Busseola sorghicida*, eine neue Ost-Afrikanische *Noctuide*. Berlin. ent. Zeitschr. xlix, pp. 55-58. [*Lepidoptera*.]
1387. TIRABOSCHI, C. Les rats, les souris et leurs parasites cutanés dans leurs rapports avec la propagation de la peste bubonique. Arch. parasit. viii, pp. 161-349 and note rectificative pp. 622-627. [*Aphaniptera*, *Anoplura*.]
1388. —. Gli animali propagatori della peste bubbonica. 4^a Nota. i ratti e i loro ectoparassiti. Boll. Soc. zool. Ital. xiii, pp. 88-97.
1389. TITUS, E. S. G. Notes on *Osmiine* with descriptions of new genera and species. J. N. York Ent. Soc. xii, pp. 22-27. [*Hymenoptera*.]
1390. —. Some new *Osmiine* in the United States National Museum. P. ent. Soc. Washington vi, pp. 98-102. [*Hymenoptera*.]
- [See also VIERECK (1454).]
1391. TOMALA, N. A radium hatása a lepkék bábjaira. Rov. Lapok xi, pp. 45-47. [*Lepidoptera*.]
1392. TOWNSEND, ANNE B. The histology of the light organs of *Photinus marginellus*. Amer. Natural. 1904, pp. 127-151. [*Coleoptera*.]
1393. TOWNSEND, R. M. Note on a parasitic fly (*Bengalia depressa*) which deposits its eggs or larvæ on the skin or covering of man and dogs. P. Rhodesia Ass. iv, pp. 7-9. [*Diptera*.]
1394. TRIMEN, R. On some new or imperfectly-known forms of South African butterflies. Tr. ent. Soc. London 1904, pp. 231-246, pls. xix, xx. [*Lepidoptera*.]
- [See also LEIGH (871).]
1395. TROST, A. Beitrag zur *Lepidopteren*-Fauna der Steiermark. B. *Heterocera* (Schwärmer und Nachtfalter). Mt. Ver. Steiermark xl, pp. 221-260.

1396. TROTTER, A. Nuovi zoocecidii della flora italiana. Seconda serie. Marcellia iii, pp. 5-13. [*Diptera*.]
1397. —. Nuovi...Terza serie. T. c. pp. —75.
1398. —. Galle della Colonia Eritrea (Africa). T. c. pp. 95-107.
1399. — & CECCONI, G. Cecidotheca italica. T. c. pp. 76-81.
1400. TSCHETVERIKOV, S. *Lepidoptera palaearctica nova*. Rev. Russe Ent. iv, pp. 77-79.
1401. TSCHITSCHÉRINE, T. [the late]. Zur Kenntniss einiger caucasischen *Trechus*-Arten (*Coleoptera*, *Carabidae*). Rev. Russe Ent. iv, pp. 147, 148.
1402. —. Notice sur la sous-tribu des *Stomini* et description d'une nouvelle espèce du genre *Stomis* Clairv. du Nord de la Perse. T. c. pp. 150, 151. [*Coleoptera*.]
1403. —. Fragments d'une revision des *Scaritini* (*Coleoptera*, *Carabidae*) des régions paléarctique et paléantarctique; synopsis des genres et des *Scarites* (Fabr.). Rev. Russe Ent. 1904, pp. 257-265.
[—]. Obituary. See SEMENOW (1274).]
1404. TULLGREN, A. On some *Hymenoptera Aculeata* from the Cameroons: with an appendix; on some type-species of the genus *Scolia* & *Belenogaster* in the Royal Museum at Stockholm. Arkiv Zool. i, pp. 425-463.
1405. —. On some species of the genus *Scolia* (s. l.) from the East Indies collected by Carl Aurivillius. T. c. pp. 465-472. [*Hymenoptera*.]
1406. —. Ur den moderna, praktiskt entomologiska litteraturen. II. Ent. Tidskr. xxv, pp. 217-229.
1407. —. Om ett nytt skadedjur på jordgubbar. T. c. pp. 230-236. [*Hymenoptera*.]
1408. TURNER, A. J. Revision of Australian *Lepidoptera*. II. P. Linn. Soc. N. S. Wales 1904, pp. 832-862. [*Notodontidae*, *Syntomidae*.]
1409. —. Revision of Australian *Lepidoptera*. Family *Geometridae*. P. Soc. Victoria xvi, pp. 218-284.
1410. —. A preliminary revision of the Australian *Thyrididae* & *Pyralidae*. Part I. P. Soc. Queensland xviii, pp. 109-199. [*Lepidoptera*.]
1411. —. New Australian *Lepidoptera*, with synonymic and other notes. Tr. R. Soc. S. Austral. xxviii, pp. 212-247.
1412. —. A classification of the Australian *Lymantriadae*. Tr. ent. Soc. London 1904, pp. 469-481. [*Lepidoptera*.]
TURNER, R. E. [See WATERHOUSE & TURNER (1495).]
1413. TUTT, J. W. A natural history of the British *Lepidoptera*. Vol. iv. London, 1904, 8vo, xvii + 535 pp. [*Sphingidae*.]
Reviews: Entomologist 1904, pp. 193, 194; by J. J. W., Ent. Mag. xl, p. 164; by BATESON, Ent. Rec. xvi, pp. 234-236.
1414. —. *Ctenonympha mathewi*, n. sp. Ent. Rec. xvi, p. 308. [*Lepidoptera*.]
1415. UHAGON, S. DE. Ensayo sobre los *Zabrus* de España y Portugal. Mem. Soc. Espan. ii, pp. 363-436. [*Coleoptera*.]
1416. UHLER, P. R. List of *Hemiptera-Heteroptera* of Las Vegas hot springs, New Mexico, collected by Messrs E. A. Schwarz & Herbert S. Barber. P. U. S. Mus. xxvii, No. 1360, pp. 349-364.

1417. ULMER, G. Über einige *Trichopteren* mit rüsselförmigen Kopfanhängen. Zool. Anz. xxviii, pp. 56-59.
1418. —. Über westafrikanische *Trichopteren*. T. c. pp. 353-358.
1419. —. Über die von Herrn Prof. Yngve Sjöstedt in Kamerun gesammelten *Trichopteren*. Arkiv Zool. i, pp. 411-423.
1420. —. Hamburgische Elb-Untersuchung. *Trichopteren*. Mt. Mus. Hamburg, Beih. ii, pp. 279-289.
1421. —. Beiträge zur Metamorphose der deutschen *Trichopteren*. xvi & xvii. Allg. Zeitschr. Ent. ix, pp. 55-59.
1422. —. *Trichopteren*. Hamburg. Magalhaen. Reise vii, 26 pp., 2 pls.
1423. —. *Ephemeren*. T. c. 8 pp.
1424. VACHAL, J. *Halictus* nouveaux ou présumés nouveaux d'Amérique. Bull. Soc. Correze xxvi, pp. 469-486. [*Hymenoptera*.]
1425. —. Voyage de M. G. A. Baer au Tucuman (Argentine). *Hymenoptera mellifera*. Rev. Ent. franc. xxiii, pp. 9-26.
1426. —. Étude sur les *Halictus*. Miscell. Ent. xii, pp. 9-16, 113-128, 137-144. [*Hymenoptera*.]
1427. —. *Halictus* et *Sphecodes* provenant des chasses de M. le Dr G. Rivet à Riobamba, Ecuador. Bull. Mus. Paris 1904, pp. 313, 314. [*Hymenoptera*.]
1428. VAN DEVENTER, W. Over de ontwikkelingstoestanden van eenige *Microlepidoptera* van Java. Tijdschr. Ent. xvi, pp. 70-89, pls. ix, x. Includes descriptions of new species by SNELLEN.
1429. —. *Microlepidoptera* van Java. Op. cit. xvii, pp. 1-42, pls. i, ii.
1430. VAN DUZEE, E. P. Annotated list of the *Pentatomidæ* recorded from America, North of Mexico, with descriptions of some new species. Tr. Amer. ent. Soc. xxx, pp. 1-80. [*Hemiptera*.]
1431. VARELA, A. G. *Redúvidos* de la Guinea española. Mem. Soc. espan. i, pp. 129-140. [*Hemiptera*.]
1432. —. Notas *hemipterológicas*. *Redúvidos* nuevos. Bol. Soc. espan. iv, pp. 55, 56.
1433. VASSILIEV, I. Ueber eine neue, bei den Vertretern der Gattung *Telenomus* parasitierende *Encyrtus*-Art (*Hymenoptera*, *Chalcididæ*). Rev. Russe Ent. iv, pp. 117, 118.
1434. VERHOEFF, K. W. Zur vergleichenden Morphologie und Systematik der *Embiiden*: zugleich 3. Beitrag zur Kenntnis des Thorax der Insekten. Acta Ac. German. lxxxii, No. 2, pp. 65, pls. iv-vii.
1435. —. Über Tracheaten-Beine. 6 Aufsatz: Hüften und Mundbeine der Chilopoden. Arch. Naturg. lxx, i, pp. 123-156, pls. vii, viii. Nachschrift, pp. 154-156. Vorläufige Mittheilung über die Verwechslung der beiden Maxillenpaare bei Insekten. Abstract by author, Zool. Zentrbl. 1904, pp. 832-834.
1436. VERITY, R. Elenco di *Lepidotteri* raccolti nell' Apennino Pistoiese (700 metri) 15 Luglio—3 Settembre 1903. Bull. Soc. ent. Ital. xxxvi, pp. 58-93.
1437. —. New forms and new localities of some European butterflies. Entomologist 1904, pp. 53-59, pl. iv and 142. [*Lepidoptera*.]
Cf. WHEELER, t. c. p. 116.

1438. VERRALL, G. H. List of British *Dolichopodidae*, with tables and notes. Ent. Mag. xl, pp. 164-173 etc. [*Diptera*.]
1439. —. *Callicera yerburyi* n. sp.: a British *Syrphid* new to science. T. c. p. 229. [*Diptera*.]
1440. VERNON, E. Die nachembryonale Entwicklung der Kopf- und Brustanhänge bei *Bombyx mori*. Zool. Anz. xxvii, pp. 429-434. [*Lepidoptera*.]
Practically an abstract of his paper of last year [Zool. Rec. Ins. VERNON (1602).]
1441. * —. La evoluzione postembrionale degli arti cefalici e toracali nel Bombyce del Gelso. Stat. Bacalog operum Padova xv, pp. 1-49, 3 pls. Probably only another publication of last year's paper. Abstract by HEYMONS, Zool. Zentrbl. 1905, p. 98.
1442. —. Zur Entwicklungsgeschichte der männlichen Geschlechtsanhänge bei Insekten. T. c. p. 470.
Protest against Zander's treatment.
1443. —. Zur Färbung der *Lepidopteren*kokons. T. c. pp. 397-399.
1444. VIEHMEYER, H. Experimente zu Wasmann's *Lomechusa*-Pseudogynen-Theorie und andere biologische Beobachtungen an Ameisen. Allg. Zeitschr. Ent. ix, pp. 334-344. [*Hymenoptera*.]
1445. VIERECK, H. L. The species of *Odontophotopsis* (*Hymenoptera*). Tr. Amer. ent. Soc. xxx, pp. 81-92.
1446. —. Additions to *Sphegoidea* (*Hymenoptera*). T. c. pp. 237-244.
1447. —. The North American Cuckoo wasps of the genus *Parnopes*. T. c. pp. 245-250. [*Hymenoptera*.]
1448. —. Two new species of the Bee genus *Perdita* from Indiana and New Jersey. Ent. News Philad. xv, pp. 21-23. [*Hymenoptera*.]
1449. —. A handsome species of *Tachysphex* from Arizona. T. c. p. 87. [*Hymenoptera*.]
1450. —. A bee-visitor of *Pontederia* (Pickerel-weed). T. c. pp. 244, 245. [*Hymenoptera*.]
1451. —. The American genera of the bee family *Dufourea*dæ. T. c. pp. 261, 262. [*Hymenoptera*.]
1452. —. A new *Cryptine* from the nest of *Ceratina dupla*. T. c. p. 333. [*Hymenoptera*.]
1453. —. One of the smallest digger wasps. Psyche xi, p. 72. [*Hymenoptera*.]
1454. —. Synopsis of bees of Oregon, Washington, British Columbia and Vancouver. Assisted by T. D. A. COCKERELL, E. S. G. TITUS, J. C. CRAWFORD junr. and H. M. SWENK. Canad. Ent. xxxvi, pp. 93-100, 157-161, 189-196, 221-232. [*Hymenoptera*.]
1455. — & COCKERELL, T. D. A. The *Philanthidæ* of New Mexico. I. J. N. York. Ent. Soc. xii, pp. 84-88. II. T. c. pp. 129-145. [*Hymenoptera*.]
1456. VIGIER, P. Sur la présence d'un appareil d'accommodation dans les yeux composés de certains Insectes. C.R. Ac. Sci. cxxxviii, pp. 775-777. [*Odonata*.]
1457. VILLARD, J. A propos d'une prétendue chlorophylle de la soie. C.R. Ac. Sci. cxxxix, pp. 165, 166.

1458. [VILLARD, J.] A propos d'une prétendue chlorophylle de la soie. C.R. Soc. Biol. lvi, pp. 134-136.
1459. VILLENEUVE, J. Contribution au catalogue des *Diptères* de France. (Suite). Feuille Natural. xxxiv, pp. 69-73, 166-173, 225-229.
1460. VOINOV, D. N. Sur une disposition spéciale de la chromatine dans la spermatogénèse du *Gryllus campestris*, reproduisant des structures observées seulement dans l'ovogénèse. Arch. zool. exp. Notes 1904, pp. lxiii-lxvi.
1461. VOSS, F. Über den Thorax von *Gryllus domesticus*, mit besonderer Berücksichtigung des Flügelgelenks und dessen Bewegung. Erster Teil. Das Skelett. Zeitschr. wiss. Zool. lxxviii, pp. 268-354, pls. xv, xvi. [*Orthoptera*.]
- WAGNER, F. v. [See FRIESE & WAGNER (553).]
1462. WAGNER, H. Beiträge zur Kenntniss der Gattung *Apion* Herbst. München. Kol. Zeitschr. ii, pp. 373-379. [*Coleoptera*.]
1463. WAHLGREN, E. Über einige Zetterstedt'sche *Nemocerentypen*. Arkiv Zool. ii, No. 7, 19 pp. [*Diptera*.]
1464. WALKER, A. O. Atmospheric moisture as a factor in distribution. S.-East. Natural. 1903, pp. 42-47. [*Lepidoptera*.]
1465. WALKER, E. M. The crickets of Ontario. Canad. Ent. xxxvi, pp. 142-144, 181-188, 249-255, pl. iv. [*Orthoptera*.]
1466. —. Notes on the *Locustidae* of Ontario. T. c. pp. 325-330, 337-341. [*Orthoptera*.]
1467. WALKER, J. J. Antipodean Field-notes. II. A year's insect hunting in New Zealand. Ent. Mag. xl, pp. 24-28, etc.
1468. —. Notes on the *Lepidoptera* of the "Curtis" collection of British insects. T. c. pp. 187-194.
- [See also BROWN (185).]
- 1468A. [WALLACE, R. Eleanor Ormerod, LL.D., Economic entomologist. Autobiography and correspondence. London, 1904, xx+348 pp., xxx pls. Review, Nature lxx, pp. 219, 220.]
1469. WALSINGHAM, The Lord. Spanish and Moorish *Microlepidoptera* (continued). Ent. Mag. xl, pp. 7, 8.
1470. —. Algerian *Microlepidoptera*. T. c. pp. 214-223, 265-273.
1471. WARBURTON, C. Annual report for 1904 of the Zoologist. Royal Agricultural Society of England. J. Agric. Soc. Engl. 1904, pp. 273-287, 4 text-figg.
1472. WARD, H. B. On the development of *Dermatobia hominis*. Mark Anniv. Vol. pp. 483-513, pls. xxxv, xxxvi. [*Diptera*.]
1473. —. Some points in the development of *Dermatobia hominis*. Stud. Lab. Nebraska iii, No. 58.
1474. WARREN, W. New American *Thyrididae*, *Uraniidae* and *Geometridae*. Nov. Zool. xi, pp. 1-173. [*Lepidoptera*.]
1475. —. New *Drepanulidae*, *Thyrididae*, *Uraniidae* and *Geometridae* from the Aethiopian region. T. c. pp. 461-482. [*Lepidoptera*.]
1476. —. New *Thyrididae* and *Geometridae* from the Oriental regions. T. c. pp. 483-492. [*Lepidoptera*.]

1477. [WARREN, W.] New American *Thyrididæ*, *Uranidæ* and *Geometridæ*. T. c. pp. 493-582.
1478. WASHBURN, F. L. Ninth annual report of the State Entomologist of Minnesota, for the year 1904. 196 pp. and 177 illustrations.
1479. —. The Mediterranean flour moth. Special report of the Entomologist. Minnesota 1904. [Extracted from preceding.]
1480. WASMANN, E. Die moderner Biologie und die Entwicklungstheorie. Zweite vermehrte Auflage. Freiburg im Breisgau 1904, 8vo, xii + 323 pp., illustrations & 4 pls.
1481. —. Neue Beiträge zur Kenntniss der *Paussiden*, mit biologischen und phylogenetischen Bemerkungen. Notes Leyden Mus. xxv, pp. 1-82, pls. i-vi; corrigenda p. 110. [*Coleoptera*, *Hymenoptera*.]
Abstract by ESCHERICH, Zool. Zentrbl. 1905, pp. 50-52.
1482. —. Contribuição para o estudo dos hospedes de abethas brasileiras. Revist. Mus. Paulista vi, pp. 482-487, pl. xvi.
1483. —. Zur Kontroverse über die psychischen Fähigkeiten der Tiere, insbesondere der Ameisen. Natur u. Schule iii, pp. 20-26, 80-89, 133-142.
1484. —. Zur Brutpflege der blutroten Raubameise (*Formica sanguinea* Ltr.). Ins.-Borse xx (1903), 3 pp.
- 1484A. —. Zur Kenntniss der Gäste der Treiberameisen und ihrer Wirthe am obern Congo, nach den Sammlungen und Beobachtungen von P. HERM. KOHL. Zool. Jahrb. Suppl. vii, pp. 611-682, pls. xxxi-xxxiii. [*Hymenoptera*, *Coleoptera*.]
1485. —. Termitophilen aus dem Sudan. Unter Mitwirkung von Prof. AUG. FOREL, K. ESCHERICH und G. BREDDIN. Swedish exp. White Nile, No. 13, 21 pp., 1 pl.
1486. —. Ein neuer *Atemeles* aus Luxemburg. Deutsche ent. Zeitschr. 1904, pp. 9-11. [*Coleoptera*.]
1487. —. Remarques critiques sur la phylogénie et la division systématique des *Termitides*. Ann. Soc. ent. Belgique 1904, pp. 370, 371.
Relates to DESNEUX (370).
1488. WASSILIEFF, A. Zur Spermatogenese bei *Blatta germanica*. Anat. Anz. xxv, pp. 257-260.
1489. —. Über Parthenogenese bei ben Arten der Schlupfwespengattung *Telenomus*. Zool. Anz. xxvii, pp. 578, 579. [*Hymenoptera*.]
— [See also JACOBSON (741).]
1490. WATERHOUSE, C. O. Supplementary list of generic names. London, 1904, 8 pp.
1491. —. Observations on *Coleoptera* of the family *Buprestidæ*, with descriptions of new species. Ann. Nat. Hist. xiv, pp. 245-267 and 314-348 (not completed).
1492. WATERHOUSE, G. A. On three collections of *Rhopalocera* from Fiji, and one from Samoa. Tr. ent. Soc. London, 1904, pp. 491-495.
1493. —. Notes on *Hesperidæ* described by Mabille and reputed to be Australian. Victorian Natural. xxi, pp. 109, 110. [*Lepidoptera*.]
1494. —. On a new species of *Heteronympha* and a new variety of *Tisiphone abeona* Don. P. Linn. Soc. N. S. Wales xxix, pp. 466-468. [*Lepidoptera*.]

1495. [WATERHOUSE, G. A.] & TURNER, R. E. Notes on Australian *Rhopalocera*: *Lycænidæ*. Part iv. Op. cit. 1904, pp. 798-804.
1496. WEBB, S., McDAKIN & GRAY, G. The diminution and disappearance of the South-Eastern Fauna and Flora within the memory of present observers. S.-East. Natural. 1903, pp. 48-60.
1497. WEBER, L. Zur Kenntnis der *Carabus*-Larven. Allg. Zeitschr. Ent. ix, pp. 414-418. [*Coleoptera*.]
1498. WEBSTER, F. M. Studies of the life-history, habits and taxonomic relations of a new species of *Oberea* (*Oberea ulmicola* Chittenden). Bull. Illinois Lab. vii, pp. 1-14, pls. i, ii. [*Coleoptera*.]
The description is by CHITTENDEN. Abstract by MAY, Zool. Zentrbl. 1904, p. 797.
1499. —. Studies of the habits and development of *Neocerata rhodophaga* Coquillett. Bull. Illinois Lab. vii, pp. 15-25, pl. iii. [*Diptera*.]
1500. —. Diffusion of the hawk-moths in North America. Canad. Ent. xxxvi, pp. 65-69. [*Lepidoptera*.]
1501. WEELE, H. W. VAN DER. New and little-known *Neuroptera*. Notes Leyden Mus. xxiv, pp. 203-215.
1502. WEISE, J. Ueber einige *Chrysochloa*-Varietäten. Munchen. Kol. Zeitschr. ii, pp. 234-237. [*Coleoptera*.]
J. DANIEL adds note.
1503. —. Über bekannte und neue *Chrysomeliden*. Arch. Naturg. lxx, i, pp. 157-178. [*Coleoptera*.]
1504. —. Beschreibung einiger *Hispinen*. Arch. Naturg. lxxi, i, pp. 49-104. [*Coleoptera*.]
1505. —. *Pseudocolaspis substriata* n. sp. Deutsche ent. Zeitschr. 1904, p. 100. [*Coleoptera*.]
1506. —. Synonymische Bemerkungen zu Gorham, Biologia Centrali-Americana, Vol. VII. *Coccinellidæ*. T. c. pp. 357-367. [*Coleoptera*.]
1507. —. Einige neue *Cassidinen* und *Hispinen*. T. c. pp. 433-452. [*Coleoptera*.]
1508. WELLENIUS, O. Ett meddelande om *Tomognathus sublævis* Nyl. Medd. Soc. Faun. Fenn. 1902-03, pp. 70-72. [*Hymenoptera*.]
1509. WERNER, F. Über eine neue Gattung aus der *Orthopteren*-Familie der *Mantodeen*. Anz. Ak. Wiss. xxvii, pp. 403-405.
1510. —. Zoologische Kreuz- und Querfahrten in Süd-Bosnien und der Herzegowina. Zool. Garten xlv, pp. 41-57.
1511. —. Neue Beiträge zur Kenntnis der Reptilien- und *Orthopteren*-fauna Kleinasiens. Zool. Anz. xxviii, pp. 79-82.
1512. WERY, JOSÉPHINE. Quelques expériences sur l'attraction des Abeilles par les fleurs. Bull. Ac. Belgique 1904, pp. 1211-1261.
1513. WESCHÉ, W. The mouth-parts of the *Nemocera* and their relation to the other families of *Diptera*. J. R. Micr. Soc. 1904, pp. 28-107, pls. iii-viii.
Abstract by DE MEIJERE, Zool. Zentrbl. 1904, p. 456.
1514. —. The labial and maxillary palpi in *Diptera*. Tr. Linn. Soc. London ix, pp. 219-230, pls. viii-x.
1515. —. Some new sense-organs in *Diptera*. J. Quekett Club (2) ix, pp. 91-104, pls. vi, vii.

1516. WHEELER, W. M. Dr Castle and the Dzierzon theory. Science xix, pp. 587-591.
Relates to CASTLE (249). Includes a criticism of Petrunkewitsch as to polar body becoming reproductive organ in bee.
1517. —. On the pupation of ants and the feasibility of establishing the Guatemalan Kelep or cotton-weevil ant in the United States. Science xx, pp. 437-440.
1518. —. Three new genera of inquiline ants from Utah and Colorado. Bull Amer. Mus. xx, pp. 1-17, pls. i, ii. [*Hymenoptera*.]
1519. —. The American ants of the subgenus *Colobopsis*. T. c. pp. 139-158. [*Hymenoptera*.]
1520. —. Ants from Catalina island, California. T. c. pp. 269-271. [*Hymenoptera*.]
1521. —. The ants of North Carolina. T. c. pp. 299-306. [*Hymenoptera*.]
1522. —. A new type of social parasitism among ants. T. c. pp. 347-375. [*Hymenoptera*.]
1523. —. A Crustacean-eating Ant (*Leptogenys elongata* Buckley). Biol. Bull. vi, pp. 251-259, 3 figg.
1524. —. The Phylogeny of the Termites. Biol. Bull. viii, pp. 29-37.
— [Translation of FOREL; see FOEL (523).]
1525. WHITNEY, C. P. Descriptions of some new species of *Tabanidæ*. Canad. Ent. xxxvi, pp. 205, 206. [*Diptera*.]
1526. WICKHAM, H. F. The influence of the mutations of the pleistocene lakes upon the present distribution of *Cicindela*. Amer. Natural. xxxviii, pp. 643-654.
1527. —. Reduplication of the tarsus in *Hydrocharis*. Ent. News Philad. xv, pp. 237, 238. [*Coleoptera*.]
1528. —. The metamorphoses of *Ægialites*. Canad. Ent. xxxvi, pp. 57-60, pl. ii. [*Coleoptera*.]
1529. —. On the systematic position of the *Ægialitidæ*. T. c. pp. 356, 357. [*Coleoptera*.]
1530. WILLIAMS, C. E. Notes on the life history of *Gongylus gongyloides* a *Mantis* of the tribe Empusides and a floral simulator. Tr. ent. Soc. London 1904, pp. 125-137. [*Orthoptera*.]
1531. WILLIAMSON, E. B. The dragonflies (*Odonata*) of Burma and Lower Siam. I. Subfamily *Calopterygineæ*. P. U. S. Mus. xxviii, No. 1389, pp. 165-187.
1532. —. A new species of *Psolodesmus* (order *Odonata*) from Formosa. Ent. News Philad. xv, pp. 247, 248.
1533. WILLIS, J. C. & BURKILL, I. H. Notes on the anthophilous insects of the Clava mountains. II. On the choice of flowers by *Syrphids*. Ann. Scott. Nat. Hist. 1904, pp. 166-168. [*Diptera*.]
1534. WIMMER, A. Studie dipterologické. Rozp. Ceske Ak. Praze ii, xiii, No. 1, 12 pp., 2 pls.
1535. WIRTNER, P. M. A preliminary list of the *Hemiptera* of Western Pennsylvania. Ann. Carnegie Mus. iii, pp. 183-232.

1536. WOODWORTH, C. W. Division of Entomology. [Report.] Rep. Agric. exp. Stat. California xxii, pp. 85-87.
1537. —. Directions for spraying for the Codling-moth. Bull. Agric. exp. Stat. California, No. 155, pp. 1-20, 4 figg.
- WULP, F. M. VAN DER (the late). [See MEIJERE (934).]
1538. WYTSMAN, P. Genera insectorum.
Cf. BERTHOUMIEU (111), DALLA TORRE (342), JACOBY & CLAVAREAU (750, 751), MABILLE (898).
1539. XAMBEU, —. Mœurs et métamorphoses des Insectes. Mélanges entomologiques (Suite). Ann. Soc. Linn. Lyon I, pp. 79-129 and 167-221.
This is accompanied by an Index to this and to the parts of the series in Vols 48 and 49 of the same work.
1540. —. Mélanges entomologiques. (Suite) 5-8. Soc. Pyrenees-or. xlv, pp. 45-72.
YOUNG, D. B. [See FELT (495).]
1541. YOUNG, L. C. H. Synonymic catalogue of the *Lepidoptera Papilionina* in the Society's collection. J. Bombay Soc. xv, pp. 483-497.
1542. —. The distribution of butterflies in India. T. c. pp. 594-601. [*Lepidoptera*.]
1543. ZAITSCHEK, ARTHUR. Versuche über die Verdaulichkeit des Chitins und den Nährwert der Insecten. Arch. ges. Physiol. civ pp. 612-623.
1544. ZANDER, E. Zum Genital-apparat der *Lepidopteren*. Zool. Anz. xxviii, pp. 182-186.
1545. ZANG, R. Ueber einige *Passaliden* aus der Sammlung des koninklijk zoologisch Genootschap natura Artis Magistra. Tijdschr. Ent. xlvii, pp. 181-185. [*Coleoptera*.]
1546. —. *Parapelopides* und *Ophrygonius*, zwei neue Gattungen der *Passaliden*. Zool. Anz. xxvii, pp. 694-700. [*Coleoptera*.]
1547. ZAVATTARI, E. Contributo alla conoscenza degli *Imenotteri* dei Pirenei. Boll. Mus. Torino xix, No. 482, 12 pp.
1548. ZICKERT, F. Contributo ad un Catalogo delle *Zygene* dell' Italia meridionale con descrizioni di varietà ed aberrazioni poco note. Natural. Sicil. xvii, pp. 67-74. [*Lepidoptera*.]
1549. ZOUFAL, V. *Antroherpon loreki* n. sp. Wien. ent. Zeit. xxiii, p. 20. [*Coleoptera*.]

II. BIOLOGY.

SUBJECT-INDEX.

1. ANATOMY AND PHYSIOLOGY.

N.B. The arrangement in the subsections is of little importance, as each of them is not complete in itself.

Modern biology, much entomological matter, WASMANN (1480).

The morphology, embryology and sexual life of Insects, HENNEGUY (676).

a. Morphology. (See also **b.**)

Legs, maxillæ, hypopharynx, VERHOEFF (1435).

Morphology of the leg, BÖRNER (158).

Morphology of leg, abstract of Verhoeff's views, VERHOEFF, Zool. Zentrbl. 1904, p. 658.

Corpora allata, nerve-centres and metameres, *Chironomus* larva, HOLMGREN (699).

Morphology of head, HOLMGREN (699).

Endoderm, vitellus, mesenteron, MARCHAL (908).

Endoderm, origin of, bee, DICKEL (379).

Endoderm study, SCHWANGART (1259).

The segmentation of the primitive Insect, anatomy of thorax, six segments, new names, anatomy of *Embiidæ*, VERHOEFF (1434).

b. General (comprehensive) and External. (See also the other subsections for special systems or organs.)

Structure of the chitin skeleton *Coleoptera*, VON LINDEN (883).

Head of *Blatta*, morphology, RILEY (1173).

Morphology of head of *Dipterous* larvæ and T-shaped ridges of oesophagus of *Musca*, HOLMGREN (700).

Morphology of head and mouth-parts, *Rhynchop. Coleopt.*, MCCLENAHAN (930).

Thorax of *Gryllus*, skeleton, VOSS (1461).

Compound structure of maxilla and of thorax, BANKS (86).

Mouth-parts, *Mallophaga*, WATERHOUSE, p. v, P. ent. Soc. London 1904.

Trophi of *Diptera*, WESCHÉ (1513, 1514).

Mouth-parts of flies, WIMMER (1534).

Hypopharynx of *Machilis*, etc., maxillula, BÖRNER (157).

Mouth-parts, *Trichoptera*, ULMER (1417).

Labrum and hypopharynx, *Hymenoptera*, HILZHEIMER (686).

Labrum, adult and young, *Odonata*, BUTLER (211).

Mouth of *Anoplura*, ENDERLEIN (463).

Structure of proboscis *Anophelides*, LEON (875).

Ventral-tube, *Collembola*, HOFFMANN (694).

Internal anat. abdomen, *Aspidomorpha*, MUIR (969).

The abdomen of *Odonata*, and its appendages, larva and imago, HEYMONS (683); HANDLIRSCH (662).

Anatomy of honey-bee, HOMMELL (702).

Anatomy and development of a *Chalcid*, EMBLETON (450).

Anatomy of mosquito, LEBREDO (867).

Anatomy and morphology *Culex*, PAZOS Y CABALLERO (1012).

Anatomical points, *Culex mucidus alternans*, COLLEDGE (297).

Epistomal appendages *Culicidæ* larvæ, KNAB (821).

Structure of *Conopidæ* and larvæ, DE MEIJÈRE (933).

Anatomy of *Ranatra*, MARSHALL & SEVERIN (917).

Diaspis pentagona, brief anatomical notes, MAZZARELLI (929).

Anatomy of *Campodea*, PHILIPTSCHENKO (1045).

Mechanics of wing movement, BULL (200).

Luminescent organs, *Photinus*, TOWNSEND (1392).

Scent-organ of *Phassus*, DEGENER (359).

Scent of *Rhopalocera*, LONGSTAFF, p. lxxxix, P. ent. Soc. London 1904.

c. Nervous System, Sense-Organs. (For Senses, Psychology etc., see p. 85.)

Morphology of central nervous system, HALLER (652).

Nerves, histology, *Periplaneta*, FLOYD (521).

Sense-organs in *Diptera*, WESCHÉ (1515).

Sense-organs, antenna of *Tryxalis*, RÖHLER (1185).

Sense-organ ?, *Ecetis*, RIS (1175).

Eye of bee, structure and development, PHILLIPS (1046A).

Eyes *Coleopt.* no. of facettes, LEINEMANN (872).

Ocelli, development in *Periplaneta* and *Cloëon*, REITZENSTEIN (1157).

Apparatus of accommodation, eye of *Æschna*, VIGIER (1456).

Static-organ, *Aphidæ*, STAUFFACHER (1335).

d. Muscular System.

Histology of muscle, *Coleoptera*, PRENANT (1107).

Histology of muscle, *Hydrophilus*, GRUVEL (643).

Mode of insertion of muscles on the skeleton, STAMM (1334).

e. Nutritive System and Glands (incl. Circulatory and Respiratory Organs, Excretion).

Peritrophic membrane, MARTYNOW (921).

Epithelium of mesenteron of *Bombus*, SEMICHON (1282).

Function of digestion, SAWAMURA (1219).

Food and digestion of *Galleria mellonella*, SIEBER & METALNIKOV (1292).

Alimentary canal, *Hydrophilus* and *Hydrous*, BORDAS (150).

Digestive system, larval, of *Spilosoma*, BORDAS (149).

Alimentary canal and proboscis of *Culex pipiens*, SCHAUDINN (1224).

Respiration, *Acridiidae*, EWING (472).

Glands of *Cynipide* larvæ, RÖSSIG (1189).

Ecdysis glands, or Verson glands, NASSONOW (973); PLOTNIKOW (1089, 1090).

Salivary glands of *Periplaneta*, LEBEDEFF (866).

Salivary glands, *Nepa*, BORDAS (152).

Head glands, *Collembola*, HOFFMANN (694).

Wax-organs, *Melipona*, DREYLING (404).

Wax-organs of Honey-bee, DREYLING (403).

Wax-glands, *Chermes*, CHOLODKOVSKY (273).

Mandibular glands, *Lep.* larvæ, BORDAS (151).

Glands accessory to silk-apparatus, *Lepidoptera*, BORDAS (148).

Labial renal excretory organs, *Thysanura*, BRUNTZ (196).

Phagocytic organs of Insects, general, DAWYDOFF (354, 355).

Phagocytic organs, *Gryllide*, DAWYDOFF (356); *Locustide*, id. (357).

f. Sexual organs and Sex (incl. Hermaphrodites).

Gonapophyses, Klapálek (815, 816).

Morphology of genitalia, *Trichoptera*, Klapálek (817).

Comparative anatomy ♂ genitalia, *Tipulide*, SNODGRASS (1323).

Male genitalia *Dolichopodide*, SNODGRASS (1324).

Male and female sexual organs of *Trichoptera*, STITZ (1349).

Saws of *Cimber* ♀, BISSCHOPP VAN TUINEN (131).

Intromittent organ in *Lepidoptera*, ZAUDER (1544).

Spermatogenesis, *Gryllus*, VOINOV (1460).

Spermatogenesis, *Blatta germanica*, WASSILIEFF (1488).

Spermatogenesis, *Syromastes*, GROSS (635, 636).

Ovaries and oogenesis, *Bacillus*, DAIBER (341).

Oogenesis in social *Hymenoptera* and other Insects, BRUNELLI (193).

Oogenesis, degeneration of ovules, *Dytiscus*, DUBUISSON (410).

Oogenesis in a *Chalcid*, peculiar eggs, EMBLETON (450).

Oocyte, perinuclear zone, GIARDINA (600).

Oogenesis, follicular epithel and nutrition of egg, *Melolontha*, MOLLISON (955).

- Oogenesis in viviparous *Aphide*, STSCHELKANOVZEW (1352).
 Egg-tubes and eggs, *Rhyssa*, BUGNION (198, 199).
 Sexes, comparative numbers, *Lep.*, TUTT, pp. 193-195, Ent. Rec. xvi;
 CHAPMAN, t. c. p. 312.
 Proportions of sexes in some raised broods of *Pteronius ribesii*, LOISELLE,
 p. 234, Feuille Natural. xxxiv.
 Relation of primary and secondary sexual characters, KELLOGG (781).
 Sex in *Aphide*, BALBIANI (77).
 Determination of sex, SCHRÖDER (1242); Determination of sex, MARCHAL
 (906, 907).
 Determination of sex, *Hymenoptera*, CASTLE (249); WHEELER (1516);
 Determination of sex, bee, PLATEAU (1088).
 Determination of sex, loss of weight in pupa, abstinence from food as
 affecting metamorphosis, KELLOGG & BELL (782).
 Gynandromorph *Lep.*, descriptive catalogue, pt. iv, SCHULTZ (1247).
 Gynandromorphic palearctic *Lep.*, catalogue, SCHULTZ (1251).
Argynnis pandora, hermaphrodite, LAMBERTIE, p. lxxi, Pr. verb. Soc.
 Linn. Bordeaux lix.—*Argynnis paphia* ♂ et hermaph. in cop., JOANNIS,
 p. 280, Bull. Soc. ent. France 1904.—Gynandromorphic *Cænonympha* and
Lasiocampa, SCHULTZ, p. 170, Soc. ent. xviii.—Gynandromorph *Pieris*,
 fig. 5, and *Automeris*, figg. 6, 7, Psyche xi, p. 113, pl. x.—Gynandrous
L. ægon, SMALL, p. 263, Entomologist 1904.—Gynandromorph *Melinæa*,
 LATHY (858).—Gynandromorph hybrid *Smerinthus*, GILLMER (608).—Gy-
 nandromorph of *Porthetria dispar*, KUSNEZOV, p. 203, Rev. Russe Ent. iv.
 Hermaphrodite of *Leptura*, BICKHARDT, p. 303, Deutsche ent. Zeitschr.
 1904.
 Four Hermaphrodites, eur. *Apida*, ALFKEN, p. 123, Soc. ent. xix.—Gynan-
 dromorphic *Ichneumon*, BERTHOUMIEU, p. 79, Bull. Soc. ent. France 1904.
 Scent of male *Pieridae*, DIXEY, pp. lvi-lx, P. ent. Soc. London 1904.
- g. Physiology.** (See also subsections b—f, and sections 2, 3.)
 Radioactivity and *Lep.* pupae, TOMALA (1391).
 Temperature experiments *Lepidoptera*, FRINGS (554); Temperature ex-
 periments, *Lyceia*, KRODEL (846).—Account of recent temperature and
 other experiments, VON LINDEN (882).
 Results of feeding silkworms on wild and on cultivated leaves, SASAKI
 (1211).
 Parthenogenesis and determination of sex, *Apis mellifica*, BUTTEL-
 REEFEN & BRESSLAU (212).
 Parthenogenesis, *Apis*, BUTTEL-REEPEN (213).
 Parthenogenesis, *Culex*, KELLOGG, p. 59, Allg. Zeitschr. Ent. ix.—Par-
 thenogenesis in *Telenomus*, WASSILIEW (1489).—Parthenogenesis, hybrids,
Cimber, VAN ROSSUM (1190).—Parthenogenesis *Epinophele*, BACHMETJEW
 (69).—Parthenogenesis in *Porthesia*, GARBOWSKI (584).
 Artificial parthenogenesis, silkworm's eggs, PÉREZ (1021).
 Regeneration larval legs, silkworm; KELLOGG (780).
 Regeneration pupa of *Lepidoptera*, HIRSCHLER (693).
 Longevity of *Margarodes*, 15 years, MAYET, p. 206, Bull. Soc. ent.
 France 1904.
 Tenacity of life, experiments, FIELDER (507).
 Phosphorescence, BAGE (75).
 Nature of poison of *Apis*, PHISALIX (1048-1050).

2. ETHOLOGY. HABITS, INSTINCT, including SENSES, PSYCHO- LOGY. (Organs of Sense, see 1c, p. 83.)

- The question of the bees' cell, DITTRICH (394).
 Insect-psychology, FOREL (523, 524).

- Mental capacities of ants, WASMANN (1483).
 Recognition among ants, FIELDE (506).
 Hearing, ants, experiments, FIELDE & PARKER (508).
 Pupa sensitive to sound, SCHUSTER (1258).
 Ants and light-rays, FIELDE (502).
 Phototaxis, *Ranatra*, HOLMES (698).
 Sensitiveness of butterflies to light, PARKER (1011).
 Light that attracts *Lepidoptera*, PERRAUD (1031, 1032).
 Choice of flowers by *Syrphidae*, WILLIS & BURKILL (1533).
 Nervous system and respiration *Acrididae*, EWING (472).
 Prey-stinging and nidification, *Hymenoptera*, BRETHES (181).
 Instinct of *Pompilus viaticus*, PICARD (1080).
 Sleep, PICTET (1082).
 Permanent night-quarters, *Aeschna* etc., SLEVOGT (1305).
 Insect swarms on mountain-tops, POULTON, pp. xxiv-xxvi, P. ent. Soc. London 1904.
 Gregarious hibernation, KELLOGG, pp. xxiii, xxiv, P. ent. Soc. London 1904.
 Migration of *Crenis boisduvali*, BELL-MARLEY, p. 116, Entomologist 1904.
 Migration of *P. cardui*, AIGNER-ABAFI (19), see also *Lepidoptera*, *Nymphalidae*.
 Migrations of *Chermes*, variable, CHOLODKOVSKY (274).
 Migration of butterflies in the Amazons valley, GOELDI (616).
 Migration, butterflies, Ceylon, MANDERS (901).
 Popular summary, sounds of *Coleoptera*, HIRSCH (692).
 Stridulation of *Cychnus*, JONTEL, p. 60, J. N. York Ent. Soc. xii.
 Sound-production, *Lamellicorn Col.*, ARROW (38).
 Stridulation, *Passalidae*, SHARP (1284).
 Sound-producing caterpillar, PACKARD (1009).
 Courting, mayflies, MOORE, p. 289, Ent. News Philad. xv.
 Male and female relations, *Phassus schamyl*, SCHAPOSCHNIKOW (359).
 Copula, insects of different genera, RAINBOW (1118).
Noctuids of different species in cop., DOD, p. 288, Canad. Ent. xxxvi.
 Copula and oviposition, *Anabius*, GILLETTE (607).
 Copula, no. of eggs, *Anasa*, GIRAULT (611).
 No. of eggs deposited by an ind., GIRAULT (609).
 Cop. between ♂ and hermaphrodite, JOANNIS, p. 280, Bull. Soc. ent. France 1904.
 Blood-sucking and oviposition etc. *Culicidae*, GOELDI (615).
 Oviposition of eggs of *Hemiptera* on the back, GIARD (597).
 Oviposition *Bombyx mori*, number of eggs, fertility, rapidity of deposition, GAL (579).
 Oviposition, *Orchelimum*, HANCOCK (656).
 Oviposition *Culex*, KNAB (822).
 Oothecas of *Cassididae* and their construction, MUIR & SHARP (969).
 Maternal solicitude, KIRKALDY (814).
 Protecting eggs, *Tectocoris*, DODD (395).
Idolothrips, eggs protected, FROGGATT (556).
Apis mellifica, nesting at large, BOUVIER, p. 187, Bull. Soc. ent. France 1904.
Bombi in Arctic regions, FRIESE (552).
 Biology of stingless bees, abstract of von Ihering's last year's paper, GRUNBERG (642).
 Symbiosis of bees and Acari, *Spolia zeylan.* i, pp. 117-119.
 Nests of wasps, DU BUYSSON (218).
 Nests of brazilian social *Vespidae*, DUCKE (411).
 Nest of *Vespa germanica*, census, PECHLANER (1014).
 Nest of *Vespa austriaca* with *rufa*, BERESFORD, p. 242, Irish Natural. 1904.

- Polistes*, habits, ADLERZ (14).
Chrysididae at Pará, DUCKE (412).
 Recent work on ants, ESCHERICH (470).
 Habits of ants, FIELDE (501).
 Habits of ants; using larvæ for spinning silk, etc., FOREL (532).
 Social parasitism, ants, new form of, WHEELER (1522).
 Inquiline ants, WHEELER (1518).
 Mixed nests of ants artificial, FIELDE (503).
 Experiments on ants, temperature and submergence, FIELDE (504).
 Stopper-headed *Colobopsis*, WHEELER (1519).
 Crustacean-eating ant, WHEELER (1523).
Tomognathus sublaevis, habits, WELLENUS (1508).
Formica sanguinea, composition of colonies as regards young etc.,
 WASMANN (1484).
 Pupation of *Ectatomma tuberculatum*, COOK (311), WHEELER (1517).
Formica rubicunda and *Xenodusa*, relations, MUCKERMANN (968).
 The relations of *Lomechusa* and *Formica*, as regards production of
 pseudogynes, VIEHMEYER (1444).
 Symbiosis, ants and *Homoptera*, Java, PENZIG (1017).
 Ants and plants, symbiosis, FOREL (526).
 Ants as originators of mounds in swamps, HOLMGREN (701).
 Habits of Termites, establishing colony etc., JACOBSON (741).
 Termites, habits, founding nests, PÉREZ (1022).
Termitidae, S. American, habits, SILVESTRI (1299).
 Nests etc. of Termites, SJÖSTEDT (1301).
 Termites as carriers of water, ELLIOT (448).
 Ants' nest, Insects, SILVESTRI (1298).
 Ants' nest, *Coleoptera*, BRUES (188).—*Ecitonidia* and its hosts, BRUES
 (189), FAUVEL (488).—Danish myrmecophilous *Col.*, JOHANSEN (764),
 NORMAND (983), SCHMIDT (1230), WASMANN (1484, 1486).—*Paussidae*,
 WASMANN (1481).
 New suborder of Termitophilous insects, BREDDIN & BÖRNER (165).
 Termitophilous Insects, WASMANN (1485).
 Myrmecophilous and termitophilous *Hemiptera*, BREDDIN (167).
 Termitophilous *Coleoptera*, LEWIS (880), PÉRINGUEY (1028), WAS-
 MANN (1484A).
 Bees'-nest insects, Brazil, WASMANN (1482).
 Cave insects, ABSOLON (6), CHOBOUT (272), CSIKI (332), In Australia,
 LEA (864), MÜLLER (970). Cavern *Coleoptera*, ABEILLE (2).—Subterranean
 spring, n. g. *Dytiscidae*, ABEILLE (3), ABEILLE (4), Basses Pyrénées, *Bathy-*
scia, 2 spp. n.—BREIT (174), CHOBOUT (268, 271), CSIKI (328), DODERO
 (397), MAYET (926), MÜLLER (971), PEYERIMHOFF (1041, 1042), REITTER
 (1142-1152).—African cave-beetle, REITTER (1154).—SCHATZMAYR (1223),
 ZOUFAL (1549).
 Dipteran in hot spring, abundance and continuance, POYNTON (1105).
 Marine larva of *Aphrosylus* commensal with *Balanus*, ROUBAUD (1200).
 Hypermetamorphic beetles and their hosts, triungulins and triunguloids,
 PIERCE (1086).
 Diptera mining in wings of live butterflies, SCHULZ (1256).
 Relations of *Anthophora* and *Melecta*, SEMICHON (1283).
 Parasitism of *Dermatobia*, WARD (1472, 1473).
 Pitcher-plant insects, JONES (766).
 Insect-catching grass, SCHWARZ (1260).
 Adobe walls, insects in, BEYER (123).
 Various insects, brief notes on habits, STEFANI-PÉREZ (1340).
 Notes on the habits of insects of various orders, ZAMBEU (1539, 1540).
 Habits of *Geotrupes*, OHAUS (992).
 Habits, nest-construction, *Attelabus bipustulatus*, GIRAULT (610).

- Habits of *Liodes* = *Anisotoma*, FLEISCHER (513).
 Larval habits, oviposition etc. *Oberca*, WEBSTER (1498).
 Habits of *Languria* larva, CHITTENDEN (265).
Hister carnivorous, DAVIS (352).
 Notes on habits of some Aculeate *Hymenopt.*, KOPF (840).
 Hymenoptera of *Rubus* and their parasites, HÖPPNER (705).
 Nest-habits *Trachusa serratulæ*, ADLERZ (15).
 Nest of Patagonian *Anthidium*, BRETHES (179).
Methoca ichneumonoides, habits, ADLERZ (16).
 Habits of *Ceropales maculata*, ADLERZ (13).
 Assembling, *Lasiocampa*, BATTLE, p. 320, Entomologist 1904.
 Drowning, *Lep.* larvæ, CHAPMAN, p. 81, Ent. Mag. xl.
 Processionary caterpillar, notes on, ROCQUIGNY-ADANSON (1183).
 Marching of *Hemileuca* larva, MARSHALL (916).
 Habits of *Clania*, an Australian *Psychid*, LITTLER (885).
Heterogynis, habits of, and species distinction, CHAPMAN (259).
 Emergence of *Limacodids* from cocoon, homeopraxy, KÜNCKEL (847).
 Construction of case, *Psychidæ*, BURKILL, P. Asiat. Soc. June 1903.
 Pupation habits, *Vanessa antiopa*, FIELD (500).
 Suspension of cocoons, variation in, *Telea*, COCKLE, p. 100, Canad. Ent. xxxvi.
 Spinning-habits, *Attaci*, WEBSTER, Canad. Ent. xxxvi, p. 133.
Lep. larvæ, stadium without feeding, CHAPMAN & others, P. ent. Soc. London 1904, pp. lxx-lxxii.
Conopidæ, habits of, DE MEIJERE (933).
 Habits of *Anopheles* in India, JAMES & LISTON (760).
 Predaceous larva of *Anopheles*, DYAR (426).
 Floor-maggot, attacking man, DUTTON etc. (419).
 Froth of *Aphrophora*, formation of, GIRAULT (612).
Vedalia and *Monophlebus*, STEBBING (1336).
 Hatching of *Lestes viridis*, PIERRE (1087) and p. 30 Bull. Soc. ent. France 1904.
Trichoptera larvæ in cases not prepared by themselves, SILFVENIUS (1296).
 Earwigs, habits of, BENNETT (100).
 Habits of *Gongylus*, a floral simulator, egg-case, WILLIAMS (1530).
Embia taurica, habits, KUSNEZOV (850).
 Leaf-rolling *Orthopteron*, CAUDELL (253).

3. DEVELOPMENT. (See also 1g. Physiology.)

- Physiology of metamorphosis, DEWITZ (377).
 Metamorphosis, origin of reparatory cells, intestinal epithelium of *Hymenoptera*, ANGLAS (33).
 Germinogony or specific polyembryony, *Proctotrypidæ* and *Chalcididæ*, MARCHAL (906).
 Polyembryonic development, determination of sex, MARCHAL (907).
 Amitosis in oogenesis, KELLOGG (779).
 Determinant of metamorphosis etc., BRUNELLI (194).
 Tracheæ and function of metamorphosis, ANGLAS (32, 34).
 Inanition and metamorphosis, BOHN (140).
 Embryology, appendage of 1st abdom. seg. *Tenebrio*, SELYS (1271).
 Development of male gonapophyses, historical, VERNON (1442).
 Development of head and thoracic appendages, *Bombyx*, abstract of paper of last year [VERNON (1602)], VERNON (1440).
 Postembryonic devel. of appendages of head and thorax, silkworm, VERNON (1441).

- Ocelli, development of in *Periplaneta* and *Cloëon*, REITZENSTEIN (1157).
 Development of wings, specially of *Coleoptera*, POWELL (1104).
 Development of rostrum of *Rhynclophora*, McCLENAHAN (930).
 Head-shield, Lep. pupa, HAVERHORST (666).
 Development of *Aphis ribis*, embryonic and post-embr., FLÖGEL (519).
 Parthenogenetic development, *Nematus*, DONCASTER (402).
 Central nervous system, post-embryonic changes, BAUER (93).
 Embryology of mesenteron, *Meloë*, CZERSKI (340).
 Metamorphosis of alimentary canal, DEGENER (358).
 Irregular metamorphosis, *Charaxes*, retention of larval head, CHRÉTIEN, p. 108, Bull. Soc. ent. France 1904.
 Intracellular histolysis, *Muscida*, PÉREZ (1020).
 Muscle, histolysis, *Muscida*, PÉREZ (1019).
 Ecdysis. See glands.

4. GENERAL SUBJECTS.

Variation and Teratology.

- Physiological distinction of forms of variation, metabolism, VON LINDEN (881).
 Statistical and general discussion of variation in 24 species of various Orders, KELLOGG & BELL (783).
 Etiology of variation, *Lep.*, ROWLAND-BROWN, p. 17, Entomologist 1904.
 Sexual variation in *Pselaphidæ*, PEYERIMHOFF (1043).
 Variation in size, *Lepidoptera*, wing, AUEL (56).
 Variation in length of wing, *Aporia crataegi*, BACHMETJEW (72).
 Moisture and Lepidopterous variation, PICTET (1081).
 Seasonal forms in *Rhopalocera*, BUTLER (209).—Seasonal phases, *Calidryades*, BUTLER (208).
 Melanic varr. in E. Tibet, OBERTHÜR, p. 174, Bull. Soc. ent. France 1904.
Rhopalocera, 18 varr. of European, SCHULTZ, Soc. ent. xix, p. 9.
 Varr. of European *Rhop.*, specially Tuscan, VERITY (1436).
 Varr. of European *Lepidoptera*, OBERTHÜR (987).
 Varr. of Belgian *Lep.*, HAVERKAMPF (667).
 45 aberrations of exotic *Rhopalocera*, LATHY (858).
 Varr. of *Parnassius*, SCHULTZ (1248).
 Variation of *Lycæna lysimon*, GRAVES, p. 51, Ent. Rec. xvi.
Heodes phlæas variation, CHAPMAN, pp. 167-172, Ent. Rec. xvi.
 Variation in number of spots, *Epinephele*, and damp seasons, BACHMETJEW (71).
 Varr. of *Epinephele tithonus*, RUSSELL, p. 125, cuts, Entomologist 1904.
 Variation of *Basilarchia proserpina* and allies, FIELD (499).
 Variation of *Hypolimnas bolina* in Fiji and Samoa, WATERHOUSE (1492).
L. aegeria, Guernsey var., LUFF, p. 190, Rep. Guernsey Soc. 1903.
 Variation of larva of *Deilephila lineata livornica*, GIARD, p. 204, Bull. Soc. ent. France 1904.
 Variation in *Philosamia*, fitness, CRAMPTON (324).
Zygæna fausta and *hippocrepidis*, copula and variation, DUPUY, pp. 11, 12, Feuille Natural. xxxv.
Catocala nupta, blue var., SMITS, p. 128, Feuille Natural. xxxiv.
 Different melanic forms of *Venusia* in Yorkshire, PORRITT, p. 377, Naturalist 1904.
 Variation in *Larentiidae*, PROUT (1108).
 Variation of *Eupithecia*, DIETZE (380).

Results of breeding from *Amphidasys betularia* and var. *doubledayaria*, CASSALL, p. 49, Ent. Rec. xvi.

Breeding varr. of *P. cenea* and *Hypolimnas misippus*, LEIGH (871).

Breeding experiments *Catopsilia*, MANDERS (901).

Crossing varr. of *Abraxas*, RAYNOR & DONCASTER (1120).

Polymorphism, ants, FOREL (525); EMERY (452).

Dimorphism ♂, *Formicidae*, FOREL (531).

Variation of *Bombus*, FRIESE & WAGNER (553).

Comparative variation of drones and worker bees, LUTZ (894).

In bees, LUTZ (894) & PHILIPPS (1046).

False drones, distinctions, BACHMETJEV (70).

Var. of *Carabus auratus*, CLÉMENT, p. 245, Bull. Soc. ent. France 1904.

Extraordinary variability of a beetle *Odontopezus cupreus*, GEBIEN, pp. 307-311, Deutsche ent. Zeitschr. 1904.

Goliathus giganteus varr., CSIKI, p. 302, Ann. Mus. Hungar. ii.

Variation of *Julodis*, ABEILLE (1).

Carabus nemoralis, anomalous tarsus, PÉNEAU, Bull. Soc. Ouest France (2) iii, p. xxxvi; *Lucanus cervus*, anomalous tarsus, MARCHAND, t. c. p. xxxvii.

Supernumerary tarsus, *Hydrocharis*, WICKHAM (1527).

Anomaly of nervuration in a *Geometer*, WARREN, p. 542, Nov. Zool. xi.

Plurality of wings, *Arctia caja*, CHAPMAN, p. lv, P. ent. Soc. London 1904.

Abnormal *Lepidoptera*, supernumerary wing, four antennæ etc., Psyche xi, p. 113, pl. x.

Pupa with larval head, *Sphinx ligustri*, ZANG, Allg. Zeitschr. Ent. ix, p. 224.

Hybrids.

Hybrids of *Sphingidae* and *Zygænidæ*, OBERTHÜR (987).

Zygæna fausta and *hippocrepidis* copula, DUPUY, p. 226, Bull. Soc. ent. France 1904.

Hybrid, *Zygæna* and *Syntomis*, VAN ROSSUM, p. 94, Ent. Ber. Nederland. i.

Copula between different species or genera, RAINBOW (1118).

Colour.

Coloration, DEWITZ (377, 378).

Opisthenogenesis, or law of development and movement of colour etc., PACKARD (1005).

Iridescent and metallic coloration, BIEDERMANN (129).

Tyrosinase in coloration, GESSARD (593).

Coloration of *Corethra* larva by feeding, KOLMER (832).

Markings of *Lepidopterous* larvæ, KUSNEZOV (849).

Diffraction, scales *Lep.* and *Thysan.*, BALSAMO (79).

Cocoons, coloration of, DEWITZ (376); VERNON (1443).

Coloration of silk, CONTE (307); DUBOIS (409): Coloration of silk, question of chlorophyll, VILLARD (1457, 1458).

Protection.

Choosing suitable situations, HAMM, p. lxxv, CHAPMAN, p. lxxvi, P. ent. Soc. London 1904.

Protection by sharing like dangers, KAYE, Tr. ent. Soc. London 1904, p. 169.

Protective coloration, GREEN (628); in *Mantis*, CESNOLA (256B).

Prot. attitudes, LONGSTAFF, p. lxxxviii, P. ent. Soc. London 1904.

Birds and butterflies, POULTON, P. ent. Soc. London 1904, p. xxxvii.

Enemies of butterflies, AITKEN (20).

Protective resemblance, KUNZE (848).

Mimicry of lichen by *Phloea*, PÉREZ (1018).

Protective resemblance in *Curculionidae*, VITALE, pp. 12-16 etc., Riv. ital. Sci. Nat. xxiv.

The coloured wings of *Catocala*, SCHAPOSCHNIKOW (1222).—*Catocala*, the wings as protective, DYAR, p. 57, J. N. York Ent. Soc.

Spot and hairs of *Acronycta alni* larva, and "Nackenstreifen" of *Gastropacha pini*, CHOLODKOVSKY (273).

Inedibility of *Meloë*, DONISTHORPE, p. 150, Ent. Rec. xvi.

Value of odour of *Hemiptera*, CONRADI (306).

Resemblance.

Resemblance, COLLINS (300-302), COMBES (303), ENTZ (466), KATHARINER (774), PACKARD (1006).

The *Papilio merope* question discussed at length, SCHRÖDER (1243).

Localised mimicry, ROTHNEY, p. lxxiii, P. ent. Soc. London 1904.

Mimicry, Aculeates, SCHULZ (1253).

Resemblance, *Volucella* etc., POULTON (1214).

Mimicry by *Glenea*, ANDREWES & POULTON, p. vii, P. ent. Soc. London 1904.

Resemblance between *Hyperechia* and *Xylocopa*, POULTON, p. lxxvi, cut, P. ent. Soc. London 1904.

Xylocopa and *Asilid* fly, GREEN, p. 158, Spolia Zeylan. ii.

The supposed mimicry of *Spilosoma mendica* ♀, FÉDERLEY (493).

Phylogeny, Evolution, Heredity.

Convergence, taxonomy, Protentomon, HANDLIRSCH (658).

Acquired characters, criticism of Lamarck, POULTON (1103).

Parallel adaptation, parasite and host, KÜNCKEL (847).

Function and structure in pupæ and cases of *Trichoptera*, THIENEMANN (1382).

The importance of indifferent characters as specific distinctions, PETERSEN (1033).

Brauer's views as to larvæ, PEYERIMHOFF (1044).

Mutation, selection, pattern phylogeny *Lepidoptera*, SCHRÖDER (1243).

Development of pattern, *Spilosoma*, FÉDERLEY (493).

The "tails" of wings of *Lepidoptera*, PIEPERS (1083).

Origin of sexual ornaments, LAMEERE (853).

Phylogeny of *Coleoptera*, BRUNELLI (194).

Phylogeny of *Tefflus*, with general remarks, KOLBE (829).

Phylogeny of *Scarabæidae* and *Curculionidae*, PORTA (1098).

Phylogeny of *Termitidae*, DESNEUX (370, 371), WASMANN (1487), WHEELER (1524).

Abstracts of numerous recent works on Evolution, SCHRÖDER (1244).

Galls.

BEUTENMÜLLER (119), BEZZI (128), COCKERELL (287), COOK (308), MATTEI (923), TROTTER (1396-1398), TROTTER & CECCONI (1399).

Gall of *Chermes orientalis*, CHOLODKOVSKY (274).—Galls of Italy, arranged phylogenically, CORRI (322).—Stalk-galls, chiefly histological, HOVARD (719).—Cynipid galls on plants other than oak, KIEFFER (791).—Galls, *Lep.*, on *Toddalea* in Ceylon, PENZIG (1017).—Phylloxerine galls, PERGANDE (1023).—Introductory work, ROSS (1188).—The larval stimulus to gall-development, RÖSSIG (1189).—Gall-guests in Italy, STEGAGNO (1341).—Galls, collection and despatch, TAVARES (1368).—*Lep.*, galls, Algeria, WALSHINGHAM (1470).—Gall on *Sagina ciliata*, TRAIL, p. 130, Ann. Scott. Nat. Hist. 1904.—TROTTER, Marocco, 6 galls, Marcellia iii, pp. 14, 15.

Insects and Flowers and Plants. (See also 2 **Ethology.**)

Berberaceæ, insects affecting, GOURY & GUIGNON (618).

Ranunculaceæ, insects affecting, GOURY & GUIGNON (617).

Insects and flowers, BOUVIER (163), WERY (1512).

Choice of flowers by *Syrphidæ*, WILLIS & BURKILL (1533).

Collections, Preservation, Museums, Nomenclature.

Softening chitine for sections, METALNIKOFF (941).

Preparation of small Insects, ENDERLEIN (459).

Collecting and preparing *Microlepidoptera*, KEARFOTT (778).

Vertical inflation of larvæ, BRAINERD, p. 52, *Canad. Ent.* xxxvi.

Larvæ, mode of drying skins, BURCHELL per POULTON pp. lxxx, lxxxi, *P. ent. Soc. London* 1904.

Preservation of galls, ZABRISKIE, p. 319, *Ent. News Philad.* xv.

Insect photography, SLINGERLAND (1308).

Portable ant-nests, FIELDE (505).

Entomological microscope, KÜSTER, *Zeitschr. wiss. Mikr.* xx, p. 429, *cut.*

Apparatus for capturing small insects by aspiration, WARNIER, pp. 52-54, *Bull. Soc. Reims* xiii.

Most successful form of lamp, PERRAUD (1031, 1032).

Collecting umbrella, PIC, pp. 6, 7, *Echance*, 1904.

Cyanide bottle, STEVENSON, p. 228, *Ent. News Philad.* xv.

Case for storing boxes, VIERECK, p. 177, *Ent. News Philad.* xv.

Selys Longchamps' collection to Belgian National Museum, *Ann. Soc. ent. Belgique* xlviii, p. 180.

F. W. MANN's collection in the Museum of the Senckenberg Soc., *Ber. Senckenberg Ges.* 1903, pp. 157*-159*.

Census of von Heyden's collection of Palæarctic *Coleoptera*, VON HEYDEN (681).

Particulars of the collections of the Deutsche entomologische National-Museum, KRAATZ, pp. 461-464, *Deutsche ent. Zeitschr.* 1904.

Types of *Cynipidæ* (coll. Bassett, Osten Sacken); of *Lepidoptera*, and of *Diptera*; in the American Museum of Natural History, BEUTENMÜLLER (120-122).

Nomenclature, K. DANIEL (346).—Critical notes, SMITH, pp. 179-186, *Ent. News Philad.* xv.

Supplement to list of names of genera, WATERHOUSE (1490).

Type; use of the word, WHEELER and others, *Ent. Rec.* xvi, pp. 200, etc., etc.

Types of genera, DYAR & CAUDELL (441).

Selecting types of genera, DYAR, pp. 189-192, *J. N. York Ent. Soc.* xii.

Selection of types of genera, DYAR, pp. 155, 156, *P. ent. Soc. Washington* vi.

Nomenclature, necessity for unchanging names, OSBORN (1002).

Methods of literature reference, K. DANIEL (348).

Bibliography.

Record of Insecta, 1903, SHARP (1285A).

Record of *Coleoptera*, and Insecta Gen., 1902, SEIDLITZ (1268).

Records of *Hymenoptera* and *Lepidoptera* for 1900, LUCAS (889).

OSTEN SACKEN, List of his entomological writings (1004).

A. R. Grote's works, List of, BODE (139).

Townend Glover's works, DODGE, p. 12, *P. ent. Soc. Washington* vi.

Canadian entomology 1902, Bibliography, BETHUNE (115).

The honey bee, 2nd edition, COWAN (323).

Biography.

- Ormerod Eleanor, Autobiography and correspondence, ORMEROD (999) & WALLACE (1468A).
 Fea, Leonardo, GESTRO (594) & PARONA, Atti Soc. Ligustica xiv, pp. 304-308.
 Fickert, Karl Rudolf, Dietrich, von LINDEN (884).
 Grote, A. Radcliffe, portrait and bibliographic list, BODE (139).
 Uhagon, Serafin de, portrait and bibliographic list, ESCALERA (468).
 Fabre, J. H., receives Prix Gegner, C.R. Ac. Sci. cxxxix, p. 1119.
 d'Orbigny, H., receives the Prix Thore, C.R. Ac. Sci. cxxxix, p. 1100.
 Brischke, C. G. A., VAN ROSSUM, p. 93, Ent. Ber. Nederland i.
 Notice and portrait of Rev. George William Taylor, Canad. Ent. xxvi, pp. 1, 2, pl. i.
 Reed, Edwin C., Revist. chilena vii, pp. 138-141, portrait.
 Lorquin, P. J. M., GRINNELL, Ent. News Philad. xv, pp. 202-204.
 Spencer, Herbert, extract from his will, P. ent. Soc. London 1904, pp. xvii-xx.

Obituary Notices (arranged alphabetically).

- Antiga y Sunyer, Pedro, MORICE, p. 239, Ent. Mag. xl.
 Beaupré, Marcel Vauloger de, Bull. Soc. ent. France 1904, p. 125.
 Behr, Dr Hans Hermann, Ent. News Philad. xv, pp. 142-144.
 Buckle, Claude W., Irish Natural. 1904, p. 156.
 Causard, Marcel, Bull. Soc. ent. France 1904, p. 137.
 Hiller, Reinhold, Deutsche ent. Zeitschr. 1904, p. 7.
 Hocking, Rev. John H., Ent. Mag. xl, p. 19.
 Kelsall, Thos., Entomologist 1904, p. 52, and BAILEY, p. 19, Ent. Mag. xl.
 Klein, J. T., Ent. News Philad. xv, p. 352.
 Komarov, A. V., SEMENOV, p. 252, Rev. Russe Ent. iv.
 Mason, Philip Brookes, W. W. F., Ent. Mag. xl, pp. 17, 18.
 McLachlan, Robert, Nature lxx, p. 106.—With portrait, CALVERT, p. 226, pl. xvi, Ent. News Philad. xv.—A. E. E. & E. S., Ent. Mag. xl, pp. 145-148.—K. J. M., Ann. Scott. Nat. Hist. 1904, pp. 201-203.—Entomologist 1904, p. 195, 196.
 Merrin, Joseph, Ent. Mag. xl, p. 112.
 Moffat, John Alston, Canad. Ent. xxxvi, p. 84.
 Philippi, R., Bull. Soc. ent. France 1904, p. 261, and with portrait and list of writings, PORTER, pp. 174-177, Revist. chilena viii.
 Rocquigny-Adanson, G. de, Bull. Soc. ent. France 1904, p. 225, and PIERRE, Rev. Sci. Bourbonnais xvii, pp. 141-143.
 Sangster, Dr John Herbert, Canad. Ent. xxxvi, p. 72.
 Schaupp, F. G., Ent. News Philad. xv, p. 352.
 Schlieben, von, Deutsche ent. Zeitschr. 1904, p. 7.
 Schmitt, Rev. Jerome, with portrait, Ent. News Philad. xv, p. 225, pl. xv, and Canad. Ent. xxxvi, p. 188.
 Schneider, Oskar, Deutsche ent. Zeitschr. 1904, p. 7, and Munchen. Kol. Zeitschr. ii, p. 94.
 Sparke, E. G. J., Ent. Mag. xl, p. 160, and Entomologist 1904, p. 196.
 Tait, William, Ann. Scott. Nat. Hist. 1904, p. 137.
 Tschitscherine, T. S., with portrait, SEMENOV, Rev. Russe Ent. iv, pp. 69-76, and G. J., Annuaire Mus. St. Petersb. ix, p. xxxii.
 Vodoz, Georges, Munchen. Kol. Zeitschr. ii, p. 93.

ECONOMIC ENTOMOLOGY.

N.B. This section is drawn up primarily for the Entomologist; special attention is therefore only given to articles that may contain new matter. In some cases articles are not referred to because scientific names are not used at all in them.

Reports: California, WOODWORTH (1536).—Canada, injurious insects in 1902, FISHER and others, Rep. ent. Soc. Ontario xxxiii, pp. 15 etc.—Colorado, 1903, GILLETTE (605).—Connecticut, BRITTON (183).—Minnesota, WASHBURN (1478): [special report, see *Ephestia* below].—New Jersey, 1903, SMITH (1318).—New York, 1903, FELT (495A).—British and extra British, THEOBALD (1372).—England, Midland Counties, COLLINGE (299).—England, 1904, WARBURTON (1471).—Ireland, 1903, CARPENTER (244).—Sweden, 1903, LAMPA (856).—Ceylon, 1903, GREEN (627).—Australia, FROGGATT (563).—New Zealand, KIRK (807).—Hawaii, *Perkinsiella saccharicida*, PERKINS (1030).

Experimental Station Record, Vols. xv, xvi, contains many notes on papers on economic entomology.

Proceedings of the sixteenth annual meeting of the Association of Economic Entomologists, Bull. U. S. Dep. Agric. Ent. xlv, contains much matter of economic interest, not specially recorded.

Abstracts of 59 recent works on economic entomology, SCHRÖDER (1241).

Principles for framing economic reports, SMITH (1320).

Injurious insects, manual, LÉCAILLON (868).

Agricultural entomology and parasitology, GUÉNAUX (644).

American Economic Ent., HOWARD (721B).

Economic entomology in India, MAXWELL-LEFROY (924).—Economic entomology in India, *Hymenoptera* etc., STEBBING (1338).

Economic entomology at St. Louis exhibition, WASHBURN, p. 769, Science xx.

Relative importance of birds and insect parasites as destroyers of insects, GRIFFINI (630).

Importance of internal parasites, EMBLETON (450).

Value of parasites and of spraying, COMPÈRE (304).

Birds, food-habits of N. American, WASHBURN (1478).

Birds as insect destroyers, SMITH, pp. 632–642, Rep. New Jersey exp. Stat. 1903.

Imported insects, utility of, specially *Scutellista*, MARLATT (914).

Useful insects, gardens, Sweden, LAMPA (857).

Light—captures by, proportion of males and females, DEWITZ, Aug. Zeitschr. Ent. ix, pp. 401–409.

Stifling by cold in cocoons, LOVERDO (886).

Insecticide experiments, SMITH (1321).

Remedies for injurious insects, Sweden, TULLGREN (1406).

Value of cyanide pot. in killing injurious insects, COSTANTIN and others, Bull. Mus. Paris ix, pp. 415–419.

On feeding silkworms, and on *Ericerus pe-la*, SASAKI, Bull. Coll. Agric. Japan 1904.

Bee-culture in India, NURSE, p. 175, J. Bombay Soc. xvi.

Bees'-wax in India, HOOPER (703).

Digestibility of Chitin, value of insects as food, ZAITSCHEK (1543).

Coleoptera useful in forestry, *Malacoderm.* and *Tenebrion.*, POMERANTZEV (1091).

Novius cardinalis and *Icerya purchasi* in Italy, RIBAGA (1170).

Caterpillars and tree-growth, FOSTER (537).

Cocoa, insects of, BANKS (80).

Coffee, insects injurious to, in German East Africa, ZIMMERMANN, cf. Berlin. ent. Zeitschr. xlix, pp. 207, 208.

- Coffee and *Xylotrechus* in Tonkin, BOUTAN (162).
 Orange, *Coccidæ* of, COCKERELL (295).
 Apple and Plum, China, *Coleophora* injurious to, BUSCK (206).
 Pear, *Cecidomyia nigra* and *Sciara pyri*, FERRAUT (498).
 Grape, new *Cecidom.* pest, SLINGERLAND & JOHNSON (1309).
 Grape leaf-hopper, *Typhlocyba*, SLINGERLAND (1306).
 Cotton, West Indies, insects attacking, BALLON (78).
 Tomato, *Dicyphus saparatus*, injurious to, cf. KYLE & GREEN, Entomologist 1904, p. 12.
 Sâl-tree, India, *Monophlebus*, etc., STEBBING (1336).
 ✓ Teak, enemies of, HOLE (696).
 Locust-tree (*Ceratonia siliqua*), *Cecidom.* injurious to, MARCHAL (911).
 Fig, coccid attacking, BERLESE (106).
 Beech-tree *Coccid*, NEWSTEAD, pp. 755-760, J. Board Agric. London xi.
 Trees destroyed by beetles, MELANDER, p. 19, Ent. News Philad. xv, pl. v.
 Roses attacked by *Platyptilia*, New York, MURTFELDT, p. 334, Canad. Ent. xxxvi.
 Rose *Cecid.*, *Neocerata rhodophaga*, WEBSTER (1499).
 Palms in New Britain injured by *Hispidæ*, SHARP (1285).
 Grass *Aphides*, PERGANDE (1024).
Sorghum, injurious insects of, THEOBALD (1375).
 Ferns and orchids, injurious insects to, Australia, FROGGATT (561).
Anthonomus grandis, SANDERSON (1209, 1210).—*Anthonomus grandis*, enemies, HERRERA (677).—Cotton-boll weevil in Cuba, SCHWARZ (1261).—Cotton-boll weevil, ant destroying, COOK (309, 310), WHEELER (1517).
Aramigus fulleri in California, MASKEW, pp. 46-50, Bull. U. S. Dep. Agric. Ent. xlv.
Brachyderes incanus, injuring firwood, JACOBI (737).
Cleonus punctiventris, ravages and diseases, WIZE, Bull. Ac. Cracovie 1904, pp. 713-726, ROVARA (1201).
Scolytus destructor in Germany, REHBERG, p. 92, Schr. Ges. Danzig xi.
Epicauta adspersa, injurious to *Solenaceæ* etc., BRÉTHES (182).
 Nut-weevils, injuries and remedies, CHITTENDEN (267).
 Pea-weevil in Canada, conference, LOCKHEAD, Rep. ent. Soc. Ontario xxxiii, pp. 3-15.
Bruchus pisi in Chile, RIVERA (1177).
Scarabæidæ, injurious to corn, Chile, RIVERA (1178).
Blennocampa geniculata, injuring strawberries, Sweden, TULLGREN (1407).
Janus compressus, injurious to pear-trees, JABLONOWSKI (732).
Nematus erichsoni, injuring larch, ERLVING, p. 72, Medd. Soc. Faun. Fenn. 1902/03.
Solenopsis geminata, injuring oranges in Porto Rico, BARRETT (89).
Clisiocampa americana, SURFACE (1356).
Deilephila livornica, injuring vines, Algeria, GIARD, pp. 203-206, Bull. Soc. ent. France 1904.
Ephestia kuehniella, reports on, WASHBURN (1478, 1479).
Oenophthira pilleriana, Pyral. of the vine, MARCHAL (912).
Leucania unipuncta in Australia, FROGGATT (559).
 Grape-berry moth, *Polychrosis viteana*, SLINGERLAND (1307).
 Moth *Oncoptera*, destructive to pastures, Tasmania, LITTLER, pp. xxvi, xxvii, P. ent. Soc. London 1904.
 Codling moth, WOODWORTH (1537).
 Asparagus-fly, *Platyparea paciloptera*, LESNE (879).
Pentatoma sayi, injuring grain, GILLETTE (605).
Aphis persica, treatment and parasites, Australia, FROGGATT (562).
Phylloxera in Europe, at present, BLUNNO (138).
Phylloxera winter egg destroyed by lysol, CANTIN (242).

- Phylloxera* on *Hicoria*, PERGANDE (1023).
Chrysomphalus minor in Europe, MARCHAL (913).
 Coccid destroying a noxious grass, FROGGATT (560).
 Termites injuries and mode of destruction in Turkestan, JACOBSON (741).
Psocid injurious in Germany, ENDERLEIN (454).
Trichoptera injurious to bridge-timbers, SILFVENIUS (1295).
Acridium succinctum and *peregrinum* in India, AITKEN, p. 157, J. Bombay Soc. xvi.
Acridium, destruction of in India, HEATH (669), MOSSE (967).
 Migratory locust of Peru characters, LYNCH ARRIBÁLZAGA (897).
 Sheep-maggot-fly, Australia, FROGGATT (564).
Phormia regina and *Lucilia caesar* attacking bird, VICENT, p. 136, Ent. News Philad. xv.
 Domestic animals, insects affecting, Amazons valley, MIRANDA (949).

Insects and disease in Man.

- Lawsuit as to mosquitoes, HOWARD, p. 7, P. ent. Soc. Washington vi.
 Insects attacking man, LELEAN (873), SAMBON (1205).
 Floor-maggot attacking man in Africa, DUTTON etc. (419).
Musca domestica as disseminator of disease, AUSTEN (67).
 Larva affecting man and dogs in French Guinea, LE DANTEC & BOYÉ (869).
 Parasites of rats and mice as conveyors of bubonic plague, TIRABOSCHI (1387, 1388).
Bengalia depressa, in Africa, attacks on man and dogs, TOWNSEND (1393).
 Insects attacking man, *Gastrophilus epilepsalis*, FRENCH, p. 83, Canad. Ent. xxxvi.
Hypoderma bovis attacking man in Sicily, CONDORELLI (305).
Dermatobia, attacks on man and animals in Costa Rica, WARD (1472, 1473).
 Larva of *Homalomyia* in the human stomach, FLORENTIN (520).
 Larvæ in the Nares, MARTINEZ (920).
 Transmission of sleeping sickness, BRUMPT & BLANCHARD (192A).
Glossina and disease, BRUMPT (191).
 Mosquito control, SMITH (1315, 1318), BRITTON (183).
 Destruction of mosquitoes by petroleum, Prince d'ARENBERG (37).
 Mosquitoes and disease, GOELDI (615).
 Mosquitoes and yellow fever, HOWARD (721A).
 Mosquitoes and malaria, GILES (601, 692).
 Malaria and mosquitoes in India, and their control, JAMES (758, 759).
Anopheles in India, JAMES & LISTON (760).
 Malaria and mosquitoes in Madagascar, NEIRET (979).
 Control of mosquitoes at Bathurst, Gambia, DUTTON (418).
 Malaria and mosquitoes in Victoria, LEACH (865).
Culicidae and their parasites, DYÉ (444).

FAUNISTIC: GEOGRAPHICAL DISTRIBUTION.

N.B.—The numbers in brackets refer to "Titles"; by their means it is intended to give a reference to every memoir containing a notice affecting the entomological fauna of each of the twelve regions here adopted. But synonymical notes and changes of systematic position are not included in these references. In addition to giving references to titles of works that actually add to the faunistic record of a region, there are also comprised references to a large number of works on local fauna, or "stations." In such cases the reference is, as a rule, made direct to the original work, not to our title-numbers, many of these local faunistic notes not being included at all in our list of titles.

In this Faunistic division varieties are not included: neither is a new genus (unless it is also a n. sp.), nor synonymy. When no subordinate locality is mentioned in connection with a memoir, it is to be understood that it refers to several divisions of the region indicated by the immediate subheading.

GENERAL.

Climate and distribution, WALKER (1464).

Distribution of some *Diaspini*, *Coccidæ*, REH (1127).

Ancient geography and modern distribution, *Cicindela*, WICKHAM (1526).

Summaries of numerous recent faunistic works, SPEISER (1333).

N. spp. without locality: see *Hymenoptera*, *Hyptia* & *Gasteruption*, *Pristaulacus*. *Colobathristes facetus* cf. *Hemiptera Lygæidæ*.

Diplatys æthiops, see *Orthoptera Forficulidæ*.

1. ARCTIC AND ANTARCTIC.

FAUVEL (485); New South Georgia, n. g. *Staphylinidæ*.

Crozet Ids. See Insular.

2. INSULAR (including NEW ZEALAND).

Madeira: *Coleoptera*, DESBROCHERS (361), *Laparocerus* sp. n. PETRI (1137), *Lixus* n. sp. *Hymenoptera*, *Formicidæ*, FOREL (531). *Diptera*, *Psychodidæ* n. sp., EATON (445).

Canary Ids.: *Hymenoptera*, *Aculeata*, SAUNDERS (1215), 8 spp. n. BERTHOUMIEU (112), *Ichneumonidæ*, 2 spp. n. *Diptera*, BECKER (95), *Peletophila* sp. n. *Hemiptera*, REUTER (1169), *Capsidæ*, 4 spp. n.

Galápagos: *Lepidoptera Perixera* sp. n., WARREN (1476).

Hawaiian Ids.: *Collembola*, CARPENTER (243). *Thysanura*, SILVESTRI (1297). *Mallophaga*, KELLOGG & CHAPMAN (784). *Macrolepidoptera*, MEYRICK (947, 948). *Hemiptera*, KIRKALDY (809), 6 spp. n. *Coccidæ*, KIRKALDY (810).—See also New Zealand, ALFKEN.

"Oceania": *Hesperiidæ*, *Corone* n. sp., MABILLE (898).

Solomon Ids.: *Coleoptera*, JACOBY (749), *Mouhotina* & *Luperodes* n. sp. *Lepidoptera*, JORDAN (771), *Caprimima*, sp. n. *Rhopalocera* n. spp., ROTHSCILD (1197). *Metallochloa* n. sp., *Xanthomima* n. sp., WARREN (1476). *Phasmidæ*, KIRBY (805), *Necroscia*, sp. n.

Rossel Ids.: *Phasmidæ*, KIRBY (805), *Eurycantha*, sp. n.

New Pomerania: *Coleoptera*, WEISE (1504), *Hispidæ*, sp. n.

New Britain: *Coleoptera*, *Hispidæ* n. g., SHARP (1285). *Phasmidæ*, KIRBY (805), *Eurycantha*, sp. n.

Bismarck Archipelago: *Psocidæ* n. g., ENDERLEIN (455).

New Hebrides: *Coleoptera*, *Theca* n. sp., *Hyocis* n. sp., FAUVEL (486).

Tonga Ids.: *Hippoboscidæ* n. sp., SPEISER (1331).

Fiji Ids.: *Hemiptera*, HORVÁTH (714), *Colobathristinæ* n. sp.

Fiji & Samoa: *Lep. Rhop.*, WATERHOUSE (1492).

- Marschall Ids., Insecta. *Chrysopa* 1 sp. n., SCHNEE (1232). KEMPNY (1785), *Chrysopa* sp. n.
- Thursday Ids.: *Phasmidae*, KIRBY (805), *Eurycantha*, sp. n.
- Shortland Ids.: *Lepidoptera*, SWINHOE (1364), *Tagiades* n. sp.
- New Caledonia: *Coleoptera*, *Buprestidae*, *Tenebrionidae* n. spp., FAUVEL (486). RAFFRAY (1114), *Pselaphidae*, general work.
- New Zealand & Hawaiian islands, *Insecta*, ALFKEN (22).
- New Zealand: *Insecta*, HUTTON (726). New Zealand, Account of a year's collecting, WALKER (1467).
- Coleoptera*, BROWN (184), 41 spp. n., genn. n. Bounty Is., BROWN (185), *Hydrophilidae* n. g. RAFFRAY (1114) *Pselaphidae* general work, *Eupines* n. sp. *Hymenoptera*, COCKERELL (282) *Leioproctus*, 2 spp. n. *Lepidoptera*, PHILPOTT (1047) Southern *Lep.* *Diptera*, HUTTON (727), *Phorocera*, 7 n. spp.—id. *Limnia*, 2 spp. n. (728)—id. (730) Campbell Is., *Calliphora* n. sp. *Neuroptera*, HUDSON (723), popular work. *Orthoptera*, REHN (1128), *Ectobia*, sp. n. Chatham Is.: HUTTON (729), *Pleiopectron*, sp. n.
- Falkland Ids.: *Insecta*, VALLENTIN, few species, Mem. Manchester Soc. xlviii, No. 23, pp. 20-22.
- Kerguelen Ids., ENDERLEIN (462), n. g. *Anoplura*.
- Crozet Ids.: *Coleoptera*, ENDERLEIN (460), *Curculionidae*, 3 spp. n., n. g. *Hemiptera*, ENDERLEIN (461) n. g. *Henicocephalidae*.

3. PALÆARCTIC REGION.

- (a.) Collective: i.e. papers referring to more than one of the following sub-divisions, *c*—*h*.

China, with the exception of Mongolia, is included in "Asia."

- Coleoptera*. ABEILLE (1), Mediterranean and Persia, *Buprest*, spp. n. BERNHAUER (107), *Aleocharini*, part 2, n. spp. DU BUYSSON (214), Basses Pyrénées and Amurland, *Elateridae*, 4 spp. n. DU BUYSSON (215), Bagdad, Spain, *Athous* n. sp. DANIEL (343), *Crepidodera*, revision, 2 spp. n. DANIEL & DANIEL (349), 10 spp. n., *Carabidae*, *Elateridae*, *Curculionidae*, *Bruchidae*, *Chrysomelidae*. DESBROCHERS (361), *Curculionidae*, 18 spp. n. DESBROCHERS (362), revision of *Lixus*, 5 spp. n. DESBROCHERS (363, 365), Caucasus and N. Persia, *Eusomus*, 4 spp. n. DESBROCHERS (364), incl. Arabia, *Curculionidae*, 5 spp. n. ESCALERA (467), Spain and Syria, *Acmaeodera*, 2 spp. n. FAUST (481), incl. Persia, Arabia, Mongolia, *Cleonides*, many spp. n. FAUVEL (483), Sinai and Red Sea, *Staphylinidae*, 6 spp. n. FLEISCHER (514), *Scaritides*, tables, n. spp. FORMÁNEK (534), Astrabad, Syria, Basses Alpes, *Barypythos*, *Omius*, spp. n. GANGLBAUER (582), Croatia, Slavonia, Servia, *Anophthalmus*, *Hydroporus*, *Riolus* n. sp. JACOBSON (740), Manchuria list, *Anomala* n. sp. JAKOVLEFF (752), Mediterranean and West Asia incl. Buchara, Persia, *Sphenoptera*, 8 spp. n. KLIMA (820), *Trogophlaeus*, revision, 3 spp. n., Amurland, Corfu and Turkestan. PETRI (1035), *Lixus* n. spp. PETRI (1036), Siberia, Alexander Mts., *Lixus* n. sp. PIC (1063), Amurland, *Cerambycidae*, spp. n., Spain, *Dorcadion* sp. n. PIC (1065), Siberia, Tokat, 9 spp. n. PIC (1068), 6 spp. n. PIC (1071), Mediterranean, Bagdad, Amurland, *Bryaxis*, *Malacod.*, *Curcul.* spp. n. PIC (1072), Spain *Dorcadion*, France *Crepidodera*, Taurus *Chrysanthia* and *Titubaea* n. sp. PIC (1077), 22 spp. n. POPPIUS (1094), N. Russia, E. Siberia, Mongolia, *Mycetoporus*, *Choleva*, *Epuraea*, *Simploxaria*, *Anatolica*, *Scythis* sp. n. RAFFRAY (1114), *Pselaphidae* general work. REITTER (1143), notes on localities etc. REITTER (1144), Pal. including Mongolia, *Saprinus*, 7 spp. n. REITTER (1148),

Cionus n. spp. REITTER (1149), Asia Minor, *Eurostus* sp. n., Galicia *Aphthona* sp. n. REITTER (1152), 15 spp. n. REITTER (1155), Algeria, *Ammæcius*, Persia, *Lethrus*, *Prosodes*, Afghanistan and Gobi, *Acinæodera*, spp. n. SCHILSKY (1227), incl. Bucharâ, *Urodon*, 3 spp. n. SEMENOV (1272), Mongolia and Tibet, *Elaphrus*, 2 spp. n. SEMENOV (1273), localities of various species. SOLARI (1326), E. Europe and Tangier *Curculionidæ*, 8 spp. n. WAGNER (1462), Austria, Corfu, *Apion*, 3 spp. n.

Lepidoptera. ALFKEN (23), *Prosopis*, 3 spp. n. BERTHOUMIEU (110), *Ichneumonidæ*, 11 spp. n. KOKUJEV (827), Corea, *Exetastes*, 2 spp. n., W. China, *Ichneumonidæ* spp. n., *Braconidæ*, 4 spp. n. KOKUJEV (828), Ural and Transcaucasus, *Ichneumonidæ*, 2 spp. n. KONOW (836), N. & Central Europe, *Lygæonematus* revision, 9 spp. n. KONOW (837), Pal. incl. Saghalin Id. *Sessiliventres*, 15 spp. n. KONOW (834), *Pachynematus* n. spp. KONOW (835), Europe and East Siberia, *Pteronotus*, 3 spp. n. MORICE (957), *Colletes*, 6 spp. n. SCHMIEDEKNECHT (1231), Oran, Switzerland, *Ichneumonidæ*, 3 spp. n. Localities for Palearctic *Sphegidæ*, SCHULZ (1254).

Lepidoptera. BARTEL (91), Palestine, *Noctuidæ*, 2 spp. n. DIETZE (380), *Eupithecia*, 16 n. spp. FUCHS (572), Sarepta, *Cucullia* n. sp.; Bornich, *Eriocrania* n. sp. HERZ (680), Korea, *Noctuidæ*, *Geometridæ*, 320 spp., 18 spp. n. PÜNGELER (1110), *Noctuidæ* *Geometridæ*, 14 spp. n. ISCHETVERIKOV (1400), Mongolia, *Dasychira* sp. n., *Noctuidæ*, 3 spp. n. TUTT (1413), *Sphingidæ* Catalogue. JOANNIS, *Microlepidoptera* 5 novelties, Bull. Soc. ent. France 1904, p. 173.

Diptera. BECKER (96), *Lispa* monograph, 9 spp. n. SPEISER (1330), Europe, Sinai, Smyrna, *Hippoboscidæ*, 2 spp. n.

Hemiptera. JAKOVLEFF (754), Siberia, Corea, Turkestan, Mongolia, *Heteroptera*, 7 spp. n. JAKOVLEFF (755), Manchuria, Central Asia, Transcaucasus, *Acanthosoma* sp. n., *Coriomoris*, 2 spp. n. MELICHAR (938), *Membracidæ* and *Cercopidæ*. REUTER (1162), Siberia and Transcaspien, *Stenodema*, 2 spp. n. REUTER (1169), Germany, Mongolia, Crete, Central Asia, *Capsidæ*, 11 spp. n. MELICHAR (939), *Cicadidæ*.

Trichoptera. MORTON (963), *Hydroptilidæ*, numerous localities; Cintra sp. n., Britain sp. n.

(b.) Europe, collectively.

Coleoptera. GANGLBAUER (580), Central Europe, general work, n. g., n. spp.

Hymenoptera. MAYR (928), Germany and S. Europe, *Chalcididæ*, *Proctotrypidæ*, spp. n., *Ormyrus* revision.

Lepidoptera. RIESEN makes some corrections to his lists of *Macrolepidoptera* published in Stettin Ent. Zeit. from 1887 to 1901; Ent. Zeit. Stettin. lxx, pp. 212-214.

Diptera. CZERNY (339), *Helomyza*, 3 spp. n.

(c.) British Islands.

THE FAUNA AS A WHOLE.

Insecta. Eddystone lighthouse, CLARKE (279). Disappearance, South-eastern Counties, WEBB, McDAKIN & GRAY (1496). Fire at Wicken fen, VERRALL, p. 112, Ent. Mag. xl.

Coleoptera. *Catops sericatus*, novelty, CHAMPION, p. 78, Ent. Mag. xl. *Agathidium bodium*, novelty, CHASTER (261). *Calodera nigrata*, novelty,

NEWBERRY, p. 251, Ent. Mag. xl. *Aulonium sulcatum*, novelty, POOL (1902).

Rhynchites sericeus withdrawn, CHAMPION, p. 79, Ent. Mag. xl.

Introduced Longicorns, BAGNALL, p. 262, Ent. Rec. xvi. Introduction of *Ptinus tectus*, HUDSON-BEARE, p. 4, Ent. Mag. xl. Doubtful or very rare British *Coleoptera*, NEWBERRY, pp. 204, 205, Ent. Rec. xvi: HUDSON-BEARE, t. c. pp. 289-291. Doubtful species in the Power collection, NEWBERRY, pp. 133, 134, Ent. Mag. xl. *Morinus funereus* in the Docks, ANSORGE, p. 117, Entomologist 1904. *Leptidea brevipennis* as British, WOOD & HOLLAND, Ent. Mag. xl. p. 60. Retrospect of a Coleopterist for 1903, HUDSON-BEARE, Ent. Rec. xvi, pp. 29-31. Ten years captures of new British beetles, DONISTHORPE, pp. 135-143, Tr. Leicester Soc. viii. British nomenclature of *Phytophaga* compared with Bedel, NEWBERRY, pp. 80-83, Ent. Rec. xvi. Catalogue of British *Coleoptera*, BEARE & DONISTHORPE (94).

Hymenoptera. MORICE continues his notes of the characters of British *Tenthredinide*, Ent. Mag. xl, pp. 33 etc.

Crabro styrius and *Halictus semipunctulatus*, novelties, SAUNDERS, Ent. Mag. xl, p. 10. *Halictus freydessneri*, novelty, SAUNDERS (1217). *Rhadinocerca micans*, novelty, MORICE, p. 100, Ent. Mag. xl.

Lepidoptera. *Ceramidia butleri* at Marlborough, MEYRICK, p. 253, Ent. Mag. xl. *P. podalirius*, BRANDE, p. 264, Entomologist 1904, and MEYRICK, t. c. p. 284. TUTT, vol. IV of British *Lepidoptera*, *Sphingidæ* (1413). Curtis coll. at Sydney, nomenclature, WALKER (1468). *Deilephila livornica* in England 1904, Entomologist 1904, pp. 188, 189. *Deilephila livornica* in England, COSTE, Nature lxx, pp. 389 & 506, THOMAS, t. c. p. 455; in Ireland, MEEHAN, p. 628, t. c.

Colias hyale in England 1900, PILLEY, Tr. Woolhope Club 1900-1902, pp. 171-173. *V. cardui* swarm at Hunstanton, BARRETT, Ent. Mag. xl, p. 61.

Diptera. *Dilophus ternatus*, *Chyliza vittata*, *Tanypeza longimana*, novelties, BLOOMFIELD, Ent. Mag. xl, p. 60. *Corethra obscuripes*, novelty, COLLIN, p. xxxiii, P. ent. Soc. London 1904. *Psychodidæ*, 2 spp. n., EATON (445). *Hydrotæa pilipes*, novelty, GRIMSHAW (632). *Oncomyia sundewalli*, novelty, GRIMSHAW (633). *Asteia elegantula*, novelty, JENKINSON, p. 4, Ent. Mag. xl. *Periscelis annulata*, *Ochthera mantispa*, novelties, LAMB, p. 277, Ent. Mag. xl. *Callicera yerburi* n. sp., VERRALL, Ent. Mag. xl, p. 229. *Neoitamus cothurnatus*, *Anthrax circumdata*, novelties, VERRALL, p. xxxiii, t. c. *Dolichopododidæ*, catalogue, novelties, VERRALL (1438).

Catalogue of *Cecidomyiidae*, COLLIN (298). The British *Diptera brachycera*, VERRALL, pp. xxviii-xxxii, P. ent. Soc. London 1904. *Oxycera dives*, confirmed, Perth, CARTER, p. 16, Ent. Mag. xl. Retrospect of a Dipterist for 1903, COLLIN, pp. 57, 58, Ent. Rec. xvi. *Trypetidæ*, some rare, DALE, pp. 212, 213, Ent. Mag. xl, and cf. VERRALL, t. c. p. 238. Notes on desiderata, VERRALL, pp. 165, 166, Entomologist 1904.

Hemiptera. *Drymus confusus*, *Salda setulosa*, novelties, BUTLER, p. 275, Ent. Mag. xl.

Trichoptera. *Oxyethira* n. sp., Rannoch, MORTON (963).

Odonata. Notable captures and novelty 1902, 1903, LUCAS (890).

Orthoptera. The British *Stenobothrus*, BURR, pp. 273-275, Ent. Rec. xvi.

Collembola. CARPENTER & EVANS (245); novelties, n. sp. *Xenylla brevicauda*, novelty, CARPENTER, p. 198, pl. xa, Irish Natural. 1904.

LOCAL LISTS.

The arrangement adopted in each Order is roughly, Channel Islands, England from South to North and from West to East, Wales, Scotland, Ireland.

Insecta. Guernsey, LUFF, pp. 197-199, Rep. Guernsey Soc. 1903 (incl. *Calosoma sycophanta*). Scilly isles, *Diptera* and *Col.*, YERBURY, pp. 154-156, Ent. Mag. xl. Dorset, RICHARDSON, first appearance, 1902, P. Dorset Club xxiv, p. 187. Hastings, BLOOMFIELD, p. 32, Rep. Hastings Soc. xi. Ashford, *Lep.* and *Dipt.*, JEFFREY, Rep. E. Kent Soc. (2) iii, p. 25 and iv, p. 35. Faversham, chiefly *Col.*, in old hedges; CHITTY, pp. 100-103, Ent. Mag. xl. Marlborough, MEYRICK, pp. 35-44, Rep. Marlbor. Soc. lii. Horsley, LUCAS, pp. 9-13, P. South London Soc. 1903. Hertfordshire, *Lep.* and *Col.*, GIBBS, pp. 139-141, Entomologist 1904. Amersham, *Col.* and *Lep.*, TURNER, pp. 3-6, P. South London Soc. 1903. Cambridgeshire, FARREN and others (479). Suffolk, TUCK, Entomological notes, Tr. Norfolk Soc. vii, pp. 635, 636. Norfolk Broads; BROWNE (186). Yorkshire, many notices see Naturalist 1904, Index, pp. 392-395. Hull; FOSTER, H. M., List of the aquatic larvæ of flies occurring in the Hull district, Tr. Hull Club iii, pp. 180, 181. Aberdeen, *Diptera* and *Tenthredinidae*, BLOOMFIELD, p. 193, Ann. Scott. Nat. Hist. 1904. South Kerry, BOUSKELL, F., Three weeks in the wilds of, with notes on the Insects and Plants, Tr. Leicester Soc. pp. 49-60. Sligo, *Col.*, HALBERT, pp. 194-196, *Hemipt.*, HALBERT, pp. 196, 197, *Aptera*, CARPENTER, pp. 197, 198, Irish Natural. 1904.

Coleoptera. Guernsey, *Calosoma sycophanta*, LUFF, p. 59, Ent. Mag. xl. Plymouth, KEYS, p. 14, t. c. Looe, *Strangalia aurulenta*, WOOD, p. 261, t. c. Isle of Wight, HUDSON BEARE, t. c. p. 257. New Forest, *Trachys parvulus*, DONISTHORPE, p. xxxix, P. ent. Soc. London 1904. New Forest, DONISTHORPE, p. 325, Ent. Rec. xvi. Dean Forest, *C. castaneus* etc., MORSE, p. 138, Ent. Mag. xl. Tewkesbury, DONISTHORPE, p. 206, Ent. Rec. xvi. Berkshire, JOY, pp. 39, 40, Ent. Mag. xl. Berkshire, JOY, p. 182, t. c. Berks, *Orochares*, JOY, p. 182, t. c. Berkshire, *Bledius femoralis*, JOY, p. 237, t. c.; FOWLER, t. c. p. 238. Berkshire, JOY, p. 279, t. c. Wokingham, *Bem. obliquum*; Oxford, *Medon dilutus*; JOY, t. c. p. 14. Oxford, *Plagiodera*, WALKER, p. 210, t. c. Oxford, *Apion brunnipes*, HOLLAND, p. 108, t. c. Bagley Wood, WALKER, p. 138, t. c. Kent, *Omalium septentrionis*, DONISTHORPE, p. 149, Ent. Rec. xvi. Canterbury etc., MAUDSON, p. 46, Rep. E. Kent Soc. (2) i, and p. 24, op. cit. iii. Sheppey, WALKER, p. 259, Ent. Mag. xl. Hastings, BENNETT, p. 326, Ent. Rec. xvi. Surrey, CHAMPION, p. 256, Ent. Mag. xl. Surrey, W. E. SHARP, Ent. Mag. xl, p. 43. Surrey, *Peritelus*, DONISTHORPE, p. 150, Ent. Rec. xvi. Woking, *Bagois brevis* etc., WALKER, p. 158, Ent. Mag. xl. Woking, *Conopalpus*, CHAMPION, p. 183, t. c. North London, *Clytus arcuatus*, WILLIAMS, p. 167, Entomologist 1904. Henley-on-Thames, *Panagæus*, FOWLER, p. 238, Ent. Mag. xl. Brandon, JENNINGS, p. 87, t. c. Brandon, TOMLIN, p. 60, t. c. Sherwood, *Rhinomacer*, TAYLOR, p. 158, t. c. Sherwood, TAYLOR, p. 258, t. c. Norfolk and Suffolk, MORLEY (960). Norfolk, EDWARDS, Tr. Norfolk Soc. vii, pp. 744-746. Norfolk, *Odontæus*, SMITH, p. 210, Ent. Mag. xl. Norfolk, *Odontæus*, ATMORE, p. 238, t. c. King's Lynn, *Ceuth. angulosus*, NEWBURY, p. 86, t. c. Norfolk, *Tetropium castaneum*, ATMORE, p. 85, t. c. Buxton, *Meloe*, TAYLOR, Ent. Mag. xl, p. 136. Derwent valley, *Metoeus*, BAGNALL, p. 159, t. c. Derwent valley, *Bembidium*, BAGNALL, p. 259, t. c. Derwent valley, *Longicornia*, BAGNALL, p. 86, t. c. Derwent valley, *Triplax aenea*, BAGNALL, p. 108, t. c. Derwent valley, *Monohammus sutor*, BAGNALL, p. 59, t. c. Yorkshire, *Geodephaga*, CARTER, pp. 148-150, Naturalist 1904. Knutsford, *Lampyrus*, OLDHAM, p. 316, Naturalist 1904. Chelford, *Prionus*, OLDHAM, p. 315, t. c.

Lake District, *Geotrupes typhaeus*, OLDHAM, p. 284, ARMITT, p. 316, Naturalist 1904. Cumberland, DAY, pp. 135, 136, Ent. Rec. xvi. Northumberland, Durham, *Clinocara*, BAGNALL, p. 108, Ent. Mag. xl. Northumberland and Durham, additions, BAGNALL, pp. 260-262, Ent. Rec. xvi. Gidside, *Triplax*, BAGNALL, p. 210, Ent. Mag. xl. Isle of Man, TOMLIN, pp. 177-179, t. c. Isle of Man, *Otiorrhynchus*, BAILEY, pp. 180, 181, t. c. Isle of Man, *Longitars. curtus*, TOMLIN, p. 60, t. c. Wales, *Quedius longicornis*, BEDWELL, p. 60, t. c. N. Wales, *Lamia*, JACKSON, p. 211, t. c. Snowdon, BEDWELL, p. 1, P. ent. Soc. London 1904. S. Wales, TOMLIN, *Lath. angusticollis*, Ent. Rec. xvi, p. 18. Peebles, BLACK, Ent. Rec. xvi, p. 17. Wigtownshire, GORDON, pp. 78-80, Ent. Rec. xvi. Rannoch, WOOD, p. 260, Ent. Mag. xl. Co. Down, *Dytiscidae*, JOHNSON, p. 93, Entomologist 1904.

Hymenoptera. Guernsey, *Aculeata*, *Chrysididae*, LUFF, p. 281, Ent. Mag. xl. Guernsey, LUFF, The *Chrysididae*, *Ichneumonidae* and *Bracidae* of, Rep. Guernsey Soc. 1903, pp. 245-247. Lyme Regis, *Aculeata*, NEVINSON, p. 13, Ent. Mag. xl. Torcross, *Aculeata*, SAUNDERS, p. 62, t. c. New Forest, *Aculeata*, BLOOMFIELD, t. c. p. 13. Milford-on-Sea, *Aculeata*, SAUNDERS, p. 280, t. c. Margate, *Andrena niveata*, SAUNDERS, p. 159, t. c. Rochester, *Aculeata*, MALLOCH, p. 87, t. c. Wellington, *Stelis 8-maculata*, BANKS, p. 179, t. c. Oxford, *Aculeata*, PERKINS and others, Rep. Oxfordsh. Soc. 1900 (no pagin.). Porthcawl, SAUNDERS, Ent. Mag. xl, p. 12. Hertfordshire, *Sirex juvenicus*, *gigas*, GIBBS, p. 40, t. c. Hertfordshire, *Sirex noctilio*, *gigas*, GIBBS, pp. 73-76, Tr. Hertfordsh. Soc. xii. King's Lynn, *Aculeata*, MALLOCH, p. 63, Ent. Mag. xl. Lincolnshire, *Hym.* galls, STOW, p. 284-346, Naturalist 1904. Louth, *Sirex noctilio*, CARTER, p. 377, Naturalist 1904. North Durham, *Aculeata*, HARRISON, p. 41, Ent. Mag. xl. Scotland, *Aculeata*, SAUNDERS, pp. 248, 249, t. c. Scotland, *Crabro styrius* and *capitosus*, EVANS, Ann. Scott. Nat. Hist. 1904, p. 58. Forth, *Andrena helvola*, CARTER, p. 248, t. c. Dumbartonshire, *Tenthredinidae* and *Aculeata*, MALLOCH, pp. 41-43, Ent. Mag. xl. Bute and Arran, *Sirex gigas* and *S. juvenicus*, BALLANTYNE, Tr. Soc. Glasgow vi, pp. 305, 306. Fort William, *Aculeata*, ROTHNEY, p. 280, Ent. Mag. xl. Aviemore, *Crabro carbonarius*, MALLOCH, p. 62, Ent. Mag. xl. Ireland, *Ichneumon.* and *Bracon.*, JOHNSON, p. 256, Irish Natural. 1904. Ireland, *Ichneumonidae*, JOHNSON, p. 262, Ent. Mag. xl.

Lepidoptera. Jersey, CONEY, pp. 127-131, Entomologist 1904. Dawlish, BROWNE, pp. 22-26, TURNER, pp. 27, 28, P. South London Soc. 1903. Morteheo, N. Devon, further notes, LONGSTAFF, pp. 29-32, Ent. Mag. xl. Dorset, *Nola albulalis*, RICHARDSON, p. 211, Ent. Mag. xl. Dorset, BANKES, pp. 253-255, t. c. Isle of Purbeck, BANKES, p. 235, t. c. Isle of Wight, *V. antiopa*, TARRANT, p. 323, Entomologist 1904. Freshwater, DOUGLAS, pp. 296-299, Entomologist 1904. Hampshire, *D. livornica*, DRUITT, p. 288, Entomologist 1904. Bournemouth, *D. livornica*, CRALLAN, p. 168, Entomologist 1904. Bournemouth, *D. livornica*, p. 243, Entomologist 1904. Eastbourne, *Cherocampa nerii*, CHARTRES, p. 242, Entomologist 1904. Mid-Kent, notes on the *Lepidoptera* of South-east, Naturalist 1904, pp. 47-54. Kent, *D. livornica*, ABBOTT, p. 265, Entomologist 1904. *V. antiopa*, FROHAWK, t. c. p. 268. Kent, PALMER, Rochester Natural. iii, pp. 223 etc. Kent, SMALL, Rep. E. Kent. Soc. ii, p. 39. Surrey, *Orthotania branderiana*, SOUTH, p. 242, Entomologist 1904. Surrey, *Trichoptilus paludum*, SOUTH, p. 287, Entomologist 1904; *Orobena straminealis*, id. l. c. Limpsfield, ADKIN, pp. 14-17, P. South London Soc. 1903. Hertfordshire 1902, BARRAUD, Tr. Hertfordsh. Soc. xii, pp. 23-35. Hertfordshire, COTTAM, A. Notes on the habits of some of our *Lepidopterous* insects: ii, the larger moths: Tr. Hertfordsh. Soc. xii, pp. 53-61. Hertfordshire, GIBBS, pp. 135, 136, Ent. Mag. xl.

Oxford, *Lep.* of the district, Rep. Ashmolean Soc. 1901, pp. 16-31. Calne, Wilts, EDDRUP, pp. 71-73, Rep. Marlbor. Soc. lii. Somersetshire, *P. argiades*, B. D. R., p. 47, Entomologist 1904. Mary Knowl Valley, *Rhopalocera*, WINTERBOURN, p. 167, Tr. Woolhope Club 1900-1902. Worcestershire, *P. moneta*, McNAUGHT, p. 243, Entomologist 1904. Leicestershire, BIRKENHEAD, pp. 84, 85, Tr. Leicester Soc. 1904. Rugby, KEYNES, Rep. Rugby Soc. 1903, pp. 39-42. Wendover, TURNER, pp. 18, 19, P. South London Soc. 1903. Felixstowe, *Botys nubilalis*, BARRETT, p. 89, Ent. Mag. xl. Suffolk, *Nola centonalis*, WALLER, p. 236, t. c. Lowestoft, *C. frazzini*, BOYD, p. 256, t. c. Suffolk, 1903, BLOOMFIELD, pp. 79-81, t. c. King's Lynn, ATMORE, pp. 103, 104, Ent. Rec. xvi. North Staffordshire, BOSTOCK, *Heterogenea limacodes*; Rep. North Staffordsh. Club xxxviii, p. 106. Chester, *Laphygma*, ARLE, p. 62, Ent. Mag. xl. Yorkshire, PORRITT (1097). Halifax, novelties; HALLIDAY, Halifax Natural. viii, p. 86. Skipwith, ASH, *Coccyx cosmophorana* etc., Ent. Rec. xvi, p. 50. Durham, *Pyrameis cardui*, HARRISON, p. 41, Ent. Rec. xvi. Durham, *Vanessa cardui*, 1903; Tr. Weardale Club i, pp. 226-228. Cumberland, *Acidalia ornata*, WOOTTON, p. 15, Ent. Mag. xl. Mid-Northumberland, ARKLE, pp. 74-77, Entomologist 1904. Monmouth, *D. livornica* and *P. moneta*, THORNEWILL, p. 214, Entomologist 1904. S. Wales, *D. livornica* etc., RANDELL, p. 265, Entomologist 1904. Londonderry, *Geometra papilionaria*, CAMPBELL, p. 257, Irish Natural. 1904. Wexford, JOHNSON, Irish Natural. 1904, p. 75. Kildare, *S. convolvuli*, LANGDALE, Zoologist 1904, p. 388.

Diptera. Jersey, BLOOMFIELD, Ent. Mag. xl, p. 88. Padstow, *Lucina fasciata*, LAMB, p. 282, t. c. Beaulieu, *Mochlonyx*, COLLIN, p. xxxix, P. ent. Soc. London 1904. New Forest, ADAMS, Ent. Mag. xl, pp. 109-111. Oxford, HUGHES, p. 51, Rep. Ashmolean Soc. 1903, p. 51. Jedburgh, *Chrysonotus bipunctatus*, EVANS, Ann. Scott. Nat. Hist. 1904, p. 129. Scotland, novelties, GRIMSHAW (633). Edinburgh, list, with *Ycteribia latreillii*, EVANS, Ann. Scott. Nat. Hist. 1904, pp. 128, 129. Forth district, GRIMSHAW (631). Forth, *Poliates hirticrus*, WATERSTON, p. 193, Ann. Scott. Nat. Hist. 1904. Forth, *Myopa testacea*, EVANS, p. 194, Ann. Scott. Nat. Hist. 1904. Midlothian, *Trichopticus aculeipes*, GRIMSHAW, p. 195, Ann. Scott. Nat. Hist. 1904. Nairn, *Laphria flava*, YERBURY, p. 212, Ent. Mag. xl. Forres, *Loxocera fulviventris*, JENKINSON, p. 17, Ent. Mag. xl. Shetlands and Orkneys, *Syrphidae*, BLOOMFIELD, p. 88, Ent. Mag. xl.

Aphaniptera. Edinburgh, list, EVANS, pp. 193, 194, Ann. Scott. Nat. Hist. 1904.

Hemiptera. Herm, *Leptopus*, LUFF, p. 280, Ent. Mag. xl. Somersetshire, *Orthostira nigrina*, SAUNDERS, p. 38, t. c. Norfolk, additions, EDWARDS, pp. 746, 747, Tr. Norfolk Soc. vii. Norwich, *Corizus hyalinus*, THOULESS, p. 16, Ent. Mag. xl. Derby, *Elasmotethus ferrugatus*, SAUNDERS, p. 38, t. c.

Coccidæ. Guernsey, the *Coccidæ* of, LUFF, Rep. Guernsey Soc. 1903, pp. 272-277. Swanage, *Rippersia*, TOMLIN, p. 282, Ent. Mag. xl. Some Hertfordshire scale-insects, HOPKINSON, pp. 49-52, Tr. Hertfordsh. Soc. xii.

Neuroptera. Lake district, MORTON, pp. 52-54, Ent. Mag. xl. Wigtownshire, *Neuronia*, MORTON, p. 281, t. c. Arran, *Trichoptera*, *Neuroptera*, *Perlidae*, *Psocidae*, WATERSTON, p. 194, Ann. Scott. Nat. Hist. 1904.

Odonata. New Forest and Surrey, DODSON, pp. 102-105, Entomologist 1904. Stroud, *Aeschna grandis*, WATKINS, p. 15, Ent. Mag. xl. Epping Forest, F. & H. CAMPION, Entomologist 1904, p. 19. Epping Forest, 1904, F. & H. CAMPION, t. c. p. 300. Norfolk Broads, PORRITT, p. 251,

Entomologist 1904. Cumberland, *Orthetrum cærulescens*, DAY, p. 111, Ent. Mag. xl. Ambleside, *Cordulia*, ARMITT, p. 250, Naturalist 1904.

Orthoptera. Christchurch, *Labidura*, CHITTY, p. liv, P. ent. Soc. London 1904. Barnsley, *Blattidæ*, BAYFORD, pp. 90, 91, Naturalist 1904.

(d.) *North Europe and Siberia* [see also (a.) and (b.)].

Insecta. ANNANDALE (35), Faroe islds. *Aptera*, *Coccidæ*, *Forficulidæ*, *Lepidoptera*, short lists. SAHLBERG (1204), Finland, novelties, 5 spp. *Col.* and *Euceros crassicornis*. Cf. also summary of additions to the Finnish fauna, pp. 244-252, Medd. Soc. Faun. Fenn. 1902/03.

Coleoptera. POPPIUS (1093), E. Siberia, *Tachinus* 3 n. spp. POPPIUS (1095), E. Siberia, *Lathridiidæ*, 3 spp. n. POPPIUS (1096), Lapland, *Omalius*, 2 spp. n., E. Siberia, *Boreaphilus* and *Coryphium* sp. n. SEMENOW (1278), Siberia, *Lathridius*, *Dapsa*, *Lycoperdina* sp. n. SEMENOW (1279), N. Russia, short list, *Platysma* sp. n. Finland novelties, J. SAHLBERG, pp. 39-41, also 142-144, Medd. Soc. Faun. Fenn. 1902/03: id. *Mycetoporus* 2 spp. t. c. pp. 210-282, Finland, 3 novelties, U. SAHLBERG, t. c. pp. 97-99. STRAND, Minarc Meddelelser vedrørende Norges *Coleopterfauna*, Arch. Math. Naturv. Kristian. xxvi, No. 3, 31 pp. Sweden localities MUCHARDT, p. 106, VARENIUS, pp. 88-132, Ent. Tidskr. xxv: MjöBERG, t. c. p. 133. VARENIUS, *Leptura livida*, novelty, Ent. Tidskr. xxv, p. 300.

Hymenoptera. AURIVILLIUS (59), *Sphegidæ* of Sweden. KOKUJEV (826), Irkutsk, *Ichneumon*, 5 spp. n. MOCSÁRY (951), Amurland, *Clavellaria* sp. n. ROMAN (1186), *Ichneumon.*, *Bracon.*, novelties. ROMAN (1187), Siberia, *Ichneumon*, 2 spp. n. Finland, Ants new or rare, WELLENIUS, p. 124, Medd. Soc. Faun. Fenn. 1902/03.

Lepidoptera. HERZ (679), N. Russia, short list. HERZ (680A), Lena, *Rhopalocera*, *Sesia* sp. n., *Noctuidæ*, 3 spp. n., *Acidalia*, 2 spp. n. REUTER (1158), Finland, *Pterophoridaæ*, *Tineidæ*, annotated list. REUTER (1160), Finland novelties.

Diptera. WAHLGREN (1463), Scandinavia, *Tipulidæ* sp. n., *Pericoma* sp. n. New for Finland or rare, list, Medd. Soc. Faun. Fenn. 1902/03.

Hemiptera. MjöBERG, Sweden, 2 spp., p. 134, Ent. Tidskr. xxv. Notes on Strand's list of Norwegian *Hem.* REUTER, pp. 111-114, Ent. Tidskr. xxv.

Coccidæ. REUTER (1159), Finland, novelties sp. n.

Perlidæ. Klapálek (819), Siberia, *Dictyopteryx* sp. n.

Psocidæ. REUTER (1161), Finland, 1 sp. n.

Collembola. AGREN (18), Lapland, *Collembola*, 4 spp. n. AXELSON (68), Norway, *Collembola* 37 spp. AXELSON (68A), Siberia, *Isotoma* sp. n. SCHÖTT (1234), Sweden, *Collembola*, 7 spp. n.

(e.) *Central and Eastern Europe*, incl. *Denmark* [see also (a.) and (b.) and for *France* (f.), for *Caucasus* (h.)].

Insecta. ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg, Verh. Ver. Hamburg naturw. xi, Insekten, pp. 6-19. HÜBER (725), Germany, *Col.* and *Hemipt.*, notes on varieties. The Alpine fauna of the Ardennes, FREDERICQ (540). PAVESI, Lombardy, Esquisse d'une faune Valdôtaine, Atti Mus. Milano xliii, Ins. pp. 227-249. HANDLIRSCH (661), Kama, Permian fossils, n. genn., n. spp.

Coleoptera. JOHANSEN (764), Danish myrmecophilous *Col.* Denmark. *Agathidium polonicum*, novelty, MUCHARDT, p. 340. Denmark. WIELANDT, Ent. Meddel. ii, pp. 334-339; Trekroner, list. EVERTS, Eerste lijst van soorten en vareiteiten nieuw voor de Nederlandsche fauna, sedert

- de uitgave der "Coleoptera neerlandica" bekend geworden; Tijdschr. Ent. xlv, pp. 135, 136. EVERTS (471), Netherlands, recent additions.
- SEVERIN, Ann. Soc. ent. Belgique xlviii, pp. 223, 224, Belgium novelties.
- ROUSSEAU, Belgium, *Cryptocephalus exiguus*, Ann. Soc. ent. Belgique xlviii, p. 145.
- HOLLAND, Eene schimmel-fauna, LEESBERG, pp. 152, 153, Ent. Ber. Nederl. i.
- MAASTRICHT, list, EVERTS, pp. 104-108, Ent. Ber. Nederl. i.
- WASMANN (1486), Luxembourg, *Atemeles* sp. n. Lower Elbe, HAGEDORN, suppl. to Koltze, Verh. Ver. Hamburg. Unterh. xii, pp. 101, 102.
- HAGEDORN (647), Centr. Eur., *Cryphalus* sp. n.
- GERHARDT, Neuheiten der schlesischen Käferfauna aus dem Jahre 1903; Deutsche ent. Zeitschr. 1904, p. 365.
- GERHARDT, Zeitschr. Ent. Breslau xxix, pp. 71-76, Neue Fundorte seltenerer schlesischer Käfer aus dem Jahre 1903, nebst Bemerkungen.
- GERHARDT, t. c. pp. 77, 78, Neuheiten der schlesischen Koleopterenfauna aus dem Jahre 1903.
- GERHARDT (591, 592); Germany, *Isomira* n. sp.
- REITTER (1151), Silesia, *Neuraphes* n. sp.
- VORBRINGER, Sammelbericht aus Ostpreussen Deutsche ent. Zeitschr. 1904, pp. 453, 454.
- VORBRINGER, East Prussia, list, novelties, Deutsche ent. Zeitschr. 1904, pp. 43-45.
- LOMNICKI, Galicia, novelties, Kosmos polski. xxix, pp. 367-373.
- FORMANÉK (535), Moravian *Scolytidae*.
- ROUBAL, J. Für Böhmen neue Käfer, Verh. Ges. Wien liv, pp. 643-645.
- CSIKI (328), Hungary, *Pholeuon* sp. n.
- CSIKI, Hungary, pp. 4-8, Rov. Lapok xi; supplement to catalogue.
- CSIKI (332), Hungary, *Anophthalmus* sp. n.
- CSIKI (330), *Cerambycidae* of Hungary, tables.
- SEMENOV (1276), Saratov, *Haliplus* sp. n.
- HEYDEN, L. VON, Beiträge zur Coleopteren-Fauna der nordwestlichen Teile Russlands, KB. Ver. Riga xlv, pp. 18-35.
- HOLDHAUS (695), Venetian Alps, long list, *Anophthalmus*, *Amara*, *Bythinus* sp. n.
- GANGLBAUER (581), Rhaetian Alps, *Trechus*, *Pselaphidae*, *Leptusa*, *Simplocaria* spp. n.
- SCHATZMAYR (1223), Carinthia, *Anophthalmus*, *Megarcturus* and *Tyrus* sp. n.
- JAQUET & PONCEY, Roumania, pp. 66-69, Bull. Soc. Bucarest xiii.
- HURMUZACHI, Roumania, Troisième catalogue des Coléoptères récoltés par les membres de la Société des Naturalistes de Roumanie, Bull. Soc. Bucarest xiii, pp. 52-65.
- FLECK (510), Roumania, first part of General Catalogue.
- BORN, P., Alps of Piedmont, *Carabidae*, Soc. ent. xix, pp. 42, 50.
- BORN, Val Aosta, *Carabus* list, Soc. ent. xix, pp. 113, 114.
- Hymenoptera*. JACOBS (738), Belgium, *Apidae*, catalogue.
- ROERMONA, *Tenihredinidae*, list, OUDEMANS, pp. 120, 121, Ent. Ber. Nederl. i.
- SEVERIN, Ann. Soc. ent. Belgique xlviii, p. 224, Belgium, *Nematus abietinum*.
- KIEFFER (796), Bitsch n. g. *Chalcidinae*.
- KRIEGER (845), Saxony, *Trichomma* n. sp.
- ENDERLEIN (456), Pomerania, *Braunsia* sp. n.
- BAER, W., Zur *Apiden*fauna der preussischen Oberlausitz, Abh. Ges. Göttingen xxiv, pp. 107-121.
- ALFKEN (24), Wallis, *Andrena* n. sp.
- FOREL (531), Vaud etc., *Formicidae*.
- VASSILIEV (1433), Charkov, *Encyrtus* sp. n.
- STROBL (1350), Styria, Catalogue completed, 4 spp.
- ASHMEAD (43), St Petersburg, *Parasitica* 3 spp. n.
- Lepidoptera*. SNELLEN (1322), Supplement to the Catalogue of Netherlands *Lepidoptera*.
- TER HAAR, Groningen, *L. optilete*, p. 97, Ent. Ber. Nederl. i.
- HIPPERT, Belgium, Ann. Soc. ent. Belgique xlviii, pp. 80-82, and t. c. p. 145.
- SAUBER (1212), Hamburg, *Microlepidoptera*, Catalogue, *Ornix* sp. n.
- TESCH, Braunschweig, novelties, Jahresber. Ver. Braunschweig xiii, p. 91.
- HERRMANN (678), Frankfurt a. O., *Macrolepidoptera*.
- PETRY (1038), Thuringia, *Nepticula* n. sp.
- REICHENAU (1140), Nassau, changes in 25 years. Swiss *Rhopalocera*, MOSS (966).
- JONES, Laquinthal, Ent. Mag. xl, pp. 1-4.
- Chamonix etc., TUTT, pp. 34-37, Ent. Rec. xvi.
- HIMSL (687), Upper Austria, *Geometridae*, Catalogue.
- ROWLAND-BROWN, Entomologist 1904, pp. 222-226, Butterfly hunting in the South Tyrol, and LOWE, t. c. p. 272.
- PREISSECKER, Lower Austria, novelties, Verh. Ges. Wien liv, p. 612.

WAGNER, Verh. Ges. Wien liv, p. 1, Pola, *Gnophos tibiaria*. TROST (1395), Styria, *Macrolepidoptera*, list completed. AIGNER, Hungary, Rov. Lapok xi, pp. 191-193, on recent additions. FLECK, Die *Macrolepidopteren* Rumäniens, Nachtrag ii, Bull. Soc. Bucarest xiii, pp. 288-308. HORMUZAKI (706), Bukowina, Supplement to Catalogue. BLOECKER, St. Petersburg, *Pyrrhia exprimens*, Rev. Russe Ent. iv, p. 225. SLEVOGT, Bathen, *Noctuidæ*, Soc. ent. xix, p. 124. HOYNINGEN-HUENE (722), Perm, Catalogue. KUSNEZOW (851), Pleskau, *Macrolep.* suppl. to Cat. KRULIKOVSKY, Ourjoum, Volga, captures, Rev. Russe Ent. iv, pp. 27-31.

Diptera. GUILLAUME (646), Belgium, *Trypetidæ*, catalogue. Roemond, list, DE MEIJERE, pp. 114-116, Ent. Ber. Nederl. i. BECKER (95), Lioland, *Peletophila* sp. n. SPEISER, Prussia supplement to Czwalina's Catalogue, Allg. Zeitschr. Ent. ix, pp. 265-268. OLDENBERG (993), Piedmont and Germany, *Saucropus*, 2 spp. n. CZERNY (338), Kremsmünster n. g. *Ochthiphilini*. BEZZI (124), Austria-Hungary, *Empidæ*, 4 spp. n. SPEISER (1328), Hungary, *Orniheza* n. sp. KERTÉSZ (790), *Culicidæ* of Hungary. FLECK (512), Roumania.

Homoptera. HUEBER (724), Germany, Cat. of *Homoptera* (except *Aphidæ* and *Coccidæ*).

Aphidæ. SCHOUTEDEN, Belgium, n. g., 2 spp. n. [(1345) of last year; reference then omitted].

Neuroptera. Middelaar, Limburg, *Neuroptera* s.l.; VAN DER WEELE, pp. 136-139, Ent. Ber. Nederl. i.

Trichoptera. ULMER (1420), Elbe, *Trichoptera*. ULMER, Zur *Trichopterenfauna* von Thüringen, Allg. Zeitschr. Ent. ix, pp. 182-185.

THIENEMANN (1383), Tyrol, 49 spp.

Orthoptera. BAER, W., Zur *Orthopterenfauna* der preussischen Oberlausitz, Abh. Ges. Grlitz xxiv, pp. 123-127. ADELUNG (11), Charkov, *Ectobia* sp. n.

Collembola. ABSOLON (6), Moravian caverns, 2 n. spp.

(f.) *France* [see also (a.), (b.) and (g.)].

Coleoptera. The Fauna as a whole, ABEILLE (2), Ariège, *Anophthalmus* n. sp. ABEILLE (3), var., n. g. *Dytiscidæ*. ABEILLE (4), Basses Pyrénées, *Bathyscia*, 2 spp. n. ABEILLE (5), *Metallites*, *Pachybrachis* and *Coroebus* sp. n. BEDEL (97), *Degorsia* introduced. CHOBOUT (271), Nîmes, *Bathyscia* n. sp. CHOBOUT (268), Ariège, *Anophthalmus* n. sp. CHOBOUT (269), Alpes maritimes, *Rhipidius* sp. n. DESBROCHERS (366), France and Corsica, *Lebiides*. DEVILLE (375), novelties and corrections. DODERO (396), Montpellier, *Mirus* sp. n. MAYET (925), Nîmes, *Aphodius* sp. n. MAYET (926), Gard, *Diaprysius* sp. n. PEYERIMHOFF (1041), Ardèche, *Diaprysius* sp. n. PEYERIMHOFF (1042), Basses-Alpes, *Anophthalmus*, 2 spp. n., *Bythinus* n. sp. PIC (1060), *Ernobius* sp. n. PUEL (1109), Gard, *Anisodactylus* sp. n. REITTER (1146), Alpes maritimes, *Alexia* n. sp. REITTER (1151), Plantey, *Loricaster* sp. n. ABEILLE, Miscell. ent. xii, p. 100, East Pyrenees, *Ptenidium* n. sp.

Coleoptera. Local lists. North France, COLIN, pp. 112-114, Bull. Soc. Nord France xvi.

HOULBERT & BÉTIS (721), W. France, *Cleridæ*. DEVILLE, Haute Marne, *Dytiscidæ* *Hydrophilidæ*, Bull. Soc. ent. France 1904, pp. 160-162. DEVILLE, Haute-Marne, Echange xx, pp. 47 etc. BEDEL, Ferté-Alais (Seine-et-Oise), list, Bull. Soc. ent. France 1904, pp. 210-212. ESTIOT, Draveil, *Tetropium fuscum*, *Anoxia* etc., Bull. Soc. ent. France 1904, p. 197. COULON, French *Col.* in Mus. d'Elbeuf, Bull. Soc. Elbeuf xxii, suppl. CARRET, Souvenirs entomologiques, Mont-Cenis Haute-Maurienne,

Echange xx, pp. 45 etc. Touraine. MÉQUIGNON, *Coléoptères de Touraine: Contributions à la faune du département d'Indre-et-Loire*, Abeille xxx, pp. 229-234. DESBROCHERS, Tours, flood-refuge, Frelon xii, pp. 109-118. FAUCONNET & VITURAT (480), Saône-et-Loire, *Staphylinidae, Pselaphidae, Scydmanidae*. Saône-et-Loire, PIC, Bull. Soc. Autun xv, pp. 251-254; also MARCHAL, t. c. pp. 263-265, PIC, op. cit. xvi, pp. 187-192. PIC, *Coléoptères recueillis en Saône-et-Loire sur deux vieux châtaigniers*, Bull. Soc. Autun xvi, pp. 165-172. Chartreuse, *Aphodius liguricus*, AGNUS, p. 31, Feuille Natural. xxxv. Bordeaux, LAMBERTIE, Pr. verb. Soc. Linn. Bordeaux, pp. cxix-cxxii. PÉREZ, Bordeaux, Pr. verb. Soc. Linn. Bordeaux lix, p. xlix. GAVOY, Catalogue Col. de l'Aude, 5ième part. *Curculionidae*, Bull. Soc. Aude xiii, pp. 223-272; 6ième part. *Cerambycidae-Coccinellidae*, op. cit. xv, pp. 167-207. CHOBAUT, S. France, on *Genista*, Bull. Soc. Nîmes xxxi, pp. 92-99. XAMBEU, Pyrénées orientales, Catalogue, continuation, pp. 19-66, suppl. to Echange 1904.

Hymenoptera. GIARD (599), Argenteuil, *Dacnusa* sp. n. GADEAU DE KERVILLE (578), Normandy. KIEFFER (793), S. France, *Evania* sp. n. ZAVATTARI (1547), French Pyrenees, general list. Supplément au catalogue des Mellifères du Sud-ouest, PÉREZ, Act. Soc. Bordeaux, pp. 5-7. DUCHASSEINT, Auvergne, *Parnopes carnea*, Feuille Natural. xxxiv, p. 267.

Lepidoptera. ANDRÉ, Saône-et-Loire, *Rhopalocera* (31). CHRÉTIEN (276), Basses Alpes, *Anacamptis*, *Coleophora* and *Nepticula* sp. n. PETRY (1040), Pyrenees, *Gelechiidae*, 2 spp. n. VIARD, *Microlepidoptera*, novelties, Bull. Soc. ent. France 1904, p. 38. North France, *Rhopalocera*, GURNEY, pp. 324, 325, Entomologist 1904. MEADE-WALDO, Normandy, Entomologist, pp. 301-303. Touraine, WALDO, Entomologist 1904, pp. 69-71. DEWITZ, Villefranche, Rhone, by light, Allg. Zeitschr. Ent. ix, pp. 382-386, 401-408. BALESTRE, Alpes maritimes, *Plusia*, 6 spp. SIEPI, Feuille Natural. xxxiv, p. 247, Sainte Baume, *Parnassius mnemosyne*. SIEPI, t. c. p. 248, Marseille, short list.

Diptera. GIARD (598), Garden of the Luxembourg, Paris, rarities. GIARD (599), Argenteuil, *Agromyza simplex*. PANDELLÉ (1010), *Muscidae*, Catalogue. VILLENEUVE (1459), Catalogue, continuation, *Ploas* sp. n., *Dysmachus* sp. n. PORTEVIN (1101), Normandy, *Syrphidae*, list. VILLENEUVE, 3 novelties, Bull. Soc. ent. France 1904, p. 235. POUJADE, Digne, id. Fontainebleau, *Echinomyia popelii*, novelty, Bull. Soc. ent. France 1904, p. 22. VILLENEUVE, *Anthomyiidae*, 24 novelties, pp. 190, 191, Bull. Soc. ent. France 1904. LESNE, Paris, *Penthetria holosericea*, Bull. Soc. ent. France 1904, p. 153.

Aphaniptera. OLIVIER (995), L'Allier.

Hemiptera. GUÉRIN & PÉNEAU (645), West France, descriptive work. OLIVIER (994), L'Allier, *Homoptera*, list with remarks. PÉNEAU (1015), *Hebrus* of France. PÉNEAU (1015), Nantes, novelties. PÉNEAU, Nantes, novelties, Bull. Soc. Ouest France (2) iv, pp. xii, xiii. FLEUTIAUX, Seine, *Orthotylus scotti*, p. 197, Bull. Soc. ent. France 1904. LAMBERTIE, Premier supplément à la contribution à la faune des *Hémiptères (Hétéroptères, Cicadines et Psyllides)* du Sud-Ouest de la France, Act. Soc. Bordeaux lix, pp. 21-30; also cf. Pr. verb. lix, pp. xlvii, xlvi.

Orthoptera. COËVRONS, Mayenne, HOULBERT, C.R. Ass. Franc. xxxii, 2, pp. 750-753. Meuse, *Mantis*, VUILLEMIN, pp. 27-29, Feuille Natural. xxxv. SIEPI, Saint-Baume, *Saga serrata*, Feuille Natural. xxxiv, p. 248.

(g.) *Southern Europe and Mediterranean Basin* [see also
(a.), (b.) and (f.) and for Caucasus and Transcaucasus (h.)].

Insecta. CHAMPION (258), Moncayo, Col. and Hemipt. FUENTE (573), Ciudad Real, *Coleoptera*, *Orthopt.*, *Hemipt.*, novelties. NAVÁS (975), Spain, *Coleoptera*, *Lep.*, *Orthopt.*, *Neuropt.* sp. ? NAVÁS (975), Sierra de Guara, *Ephippiger* sp. n., *Acrid.* 2 spp. n. CORTI (322), Galls of Italy. TROTTER & CECONI (1399), Italian galls, arranged according to plants. COBELLI, Rovereto *Hym. Homopt.* 4 spp. Allg. Zeitschr. Ent. ix, pp. 11, 12. WERNER (1510), Bosnia and Herzegovina, account of journey. Majorca, MUSCHAMP, pp. 221, 222, Ent. Rec. xvi. Cephalonia, SANGIORGI, Atti Soc. Modena xxxvi, pp. 72-93.

Coleoptera. NORMAND (983), Albères, subterranean, list. DESBROCHERS (367), Spain, Portugal, Bosnia, *Thylacites*, 3 spp. n. PIC (1076), Spain and Balearic islds., *Anthicus*, Algeria, *Tychius* sp. n. REITTER (1156), Spain, *Athous*, 5 spp. n. UHAGON (1415), Spain, *Zabrus*, monograph, 2 spp. n. FERRER Y VERT, Barcelona, short lists, Butll. Inst. Catalan. i, pp. 14, 15, 78-80 & 105-111. FONT, Coves, short list, Butll. Inst. Catalan. i, pp. 116-119. FUENTE, Moncayo, Bol. Soc. Aragon ii, pp. 232, 233. FRANÇOIS (539), Carthage, *Thorectes* sp. n. DODERO (397), Sardinia, *Bythinus* n. sp. Capri, N. Italy, *Bathyscia*, 3 spp. n. REITTER (1145), Lucano, n. g. *Endomychidae*. VITALE, Messina, Boll. Natural. xxiv, pp. 26-28, 37-40, 54-56, 74-76. DODERO, Italy, *Bathyscia*, list of, Nat. Sicil. xvii, pp. 121-123. CARRET (246), N. Italy, *Athous* sp. n. MÜLLER (970), Dalmatia, *Apholeuonius*, 2 spp. n. MÜLLER (972), Dalmatia, *Bythinus* sp. n., *Alphitophagus* sp. n. GANGLBAUER (583), Meleda isld., Dalmatia, list with 1 sp. n. MÜLLER, Austrian coast, Munchen. Kol. Zeitschr. ii, pp. 314-320. ZOUFAL (1549), Herzegovina, *Silphidae*, 1 sp. n. REITTER (1142), Herzegovina, *Bathyscia* sp. n. REITTER (1141), Herzegovina, *Dicerca* sp. n. REITTER (1151), Herzegovina, *Elater* sp. n. MÜLLER (971), Herzegovina, *Antroherpon* sp. n., *Bathyscia* sp. n. PENECKE (1016), Herzegovina, *Quedius* sp. n. BREIT (174), Herzegovina, *Anophthalmus* sp. n., Piedmont, *Lathrobium* sp. n. PIC, Greece and Corfu, *Malachius*, Bull. Soc. ent. France 1904, p. 42. CSIKI (329), Servia, *Otiorrhynchus* sp. n., *Phytonomus* sp. n. CSIKI (331), Servia, *Platynus* sp. n. RAGUSA (1115), Sicily. REITTER (1147), Sicily, *Pselaphus* n. sp. VITALE, Nat. Sicil. xvii, pp. 77 etc.; Sicily, *Curculionidae*, novelties. VITALE, Nat. Sicil. xvii, pp. 26-41; Sicily, *Cossonini*. RAGUSA, xvii, pp. 49-54, 84-92; *Coleotteri* nuovi o poco conosciuti della Sicilia. RAGUSA, Nat. Sicil. xvii, pp. 21-24; Sicily, *Curculionidae*. FIORI (509), Sicily, *Malthodes*, 2 spp. n. SCHULTZE (1252), Corsica and Algeria, *Baris*, 2 spp. n. FAUVEL (484), Algeria, *Geostiba* sp. n. DEVILLE (374), S. France and Algeria, *Dyschirius* sp. n. DU BUYSSON (216), Morocco, *Agriotes* sp. n. NORMAND (982), Tunis, *Pselaphidae*, 5 spp. n. PIC (1075), Asia Minor, *Dermest.*, *Ceton.*, *Malacod.*, *Cistelid.*, *Anthicid.* sp. n. PIC (1073), Taurus, *Clytus* sp. n. PIC (1069), Egypt and Anatolia, *Laria* and *Urodon* spp. n. PIC (1061), S. Europe, Asia Minor, *Attagenus*, *Malacoderm.*, *Anthicus*, *Curcul.*, spp. n. PIC (1059), Syria, *Cardiophorus* sp. n. PIC (1058), Tokat, *Prionychus* n. sp. DEMAISON (360), Asia Minor, *Oochrotus* sp. n. K. DANIEL (347), Crete and Asia Minor, *Leptura*, 2 spp. n.

Hymenoptera. ANTIGA and others (36), Catalonia, *Aculeata* and *Chrysid.* BERTHOUMIEU (112), Spain, *Ichneumonidae*, 4 spp. n. BERTHOUMIEU (113), Escorial, *Cutadelphus* sp. n. DUSMET (417), Alicante, *Alustor* n. sp. GARCIA (585), Spain, Syria, Cairo, *Chrysid.* 4 spp. n. GARCIA (586), *Hedychridium* sp. n. GARCIA (587), Spain, *Bembex*,

3 spp. n. GARCIA (588), Madrid, *Nysson* n. sp. SAUNDERS & POULTON (1214), Majorca and Spain, *Aculeata*, 5 spp. n. MANTERO (904), Island of Giglio, n. g. *Bracon.*, *Pompilus* n. sp. MANTERO (902), North Italy, *Braconidae*, 82 spp. STEGAGNO (1341), Guests in galls, Italy. BUYSSON (217), Zante, *Hedychridium* sp. n., Turkey, *Chrysis* sp. n. KIEFFER (794), S. Eur. and Tunis, *Proctotryp.*, 23 spp. n. FOREL (532), Kairouan, list, *Oxyopomyræx* sp. n., *Biskra Stenamma* n. sp. KIEFFER (793), *Gasteruption* sp. n. FOREL (532), Jerusalem, short list:

Lepidoptera. CHAPMAN (259), Canales, *Heterogynis* sp. n. CHRÉTIEN (275), Segovia *Tephroclystia* sp. n. TUTT (1414), Vigo, *Cænonympha* n. sp. WALSHINGHAM (1469), Spain and Morocco, *Microlep.* spp. n. N. Spain, *Geometridæ*, PROUT, pp. 284-289, Ent. Rec. xvi. Sierra de la Demanda and Moncayo, CHAPMAN, pp. 85 etc., etc., Ent. Rec. xvi. MALUQUER, Ubach, Tarrasa, short list, Butl. Inst. Catalan i, pp. 56-59. BROWNE, Mediterranean, Entomologist 1904, pp. 186-188, 204-207. FLETCHER (517), Malta, list. VERITY (1436), Pistoja, list. VERITY (1437), Tuscany, *Rhop.* varr. VERITY, Italy, *Ochrostigma melagona*, novelty, Bull. Soc. ent. Ital. xxxvi, p. 11. PERLINI, Cat. of Italian *Lep.* continued, Riv. ital. Sci. Nat. xxiv, pp. 1 etc., etc. CANNAVIELLO, S. Italy, Riv. ital. Sci. Nat. xxiv, pp. 16-19 etc. FLECK (511), Dobrudscha, account of travelling. REBEL (1122), Bosnia, Herzegowina, Catalogue and comparative distribution, *Tineidæ*, 6 spp. n. ZICKERT (1548), S. Italy, *Zygena*. RAGUSA, Sicily, novelties, Nat. Sicil. xvii, pp. 18-20. PETRY (1039), Corsica, *Scoparia*, *Conchylis*, *Lita*, *Stigmatophora*, *Lithocolletis*, sp. n. WALSHINGHAM (1470), Algeria, *Tineidæ* n. spp., n. genn. CHRÉTIEN, Algeria, *Pyralidæ* and *Microlep.*, Naturaliste 1904, pp. 45, 46. FOUNTAINE (538), Asia Minor, list. BARTEL (90), Syria, *Eriogaster* sp. n.

Diptera. CORTI (321), Portugal, list of 86 spp. TROTTER (1396, 1397), Galls, *Perrisia* n. sp. KIEFFER (792), Vallombrosa, *Cecidomyiæ*, 2 spp. n. BEZZI (124), Bosnia, *Clinocera* n. sp. EATON (445), Algeria, *Psychodidæ* sp. n. MARCHAL (911), Cyprus, *Cecidom.* sp. n. GILES (604), Asia Minor, *Culex fuscatus*.

Aphaniptera. KOHAUT (824), Bosnia, *Typhlopsylla* n. sp. KOHAUT (825), Bosnia, *Typhlopsylla* n. sp. ROTHCHILD, N. (1192), Egypt, 4 spp. n.

Hemiptera Heteroptera. REUTER (1166), Soria, *Globiceps* n. sp. ARDID, Zaragoza, Bol. Soc. Aragon. ii, pp. 270-273. Cyprus, KIRKALDY, *Rincoti* raccolti dal Dott. G. Cecconi nell' isola di Cipro, Bull. Soc. ent. Ital. xxxvi, pp. 94-98. SPEISER (1332), Egypt, *Polycetes* sp. n.

Homoptera. COBELLI, R., Contribuzioni alla *Cicadologia* del Trentino. Verh. Ges. Wien liv, pp. 556-558. HORVÁTH (716), Spain, Morocco, Asia Minor, *Caliscelis*, 3 spp. n.

Coccidæ. BERLESE (106), S. Italy, *Mytilaspis* n. sp.

Neuroptera. VENTALLÓ, Tarrasa, Butl. Inst. Catalana i, pp. 113-115. NAVÁS (974), *Planipennia*, *Perlida*, *Ephemeridæ*, spp. n. NAVÁS (976), *Myrmeleonides*, 1 sp. n. KIRBY (806), Amanus Mts., *Chasmatoptera* sp. n.

Perlida. MORTON, Algeria, *Strobliella minuta*, Ent. Mag. xl, p. 39.

Termitidæ. SJÖSTEDT (1301), Algeria and Tangier, *Termitidæ*, 2 spp. n.

Thysanura. SILVESTRI (1300), Umbria, *Machilidæ*, 2 spp. n. KUSNEZOV, Crimea, *Japyx solifugus*, Rev. Russe Ent. iv, p. 227.

Orthoptera. MEI (932), Alpes maritimes, *Locust.*, *Acrid.* SHUGUROV, S. Russia, *Acrida turrita*, distribution, p. 255, Rev. Russe Ent. iv. WERNER (1511), Asia Minor, *Saga*, list.

- (h.) *Caucasus* and *West and Central Asia*, including *Arabia* [see also (a.) and (b.)]: for Tibet see 6, for Mediterranean Asia see (g.).

Insecta. SAHLBERG (1203), expedition with lists *Col.* and *Hemipt.*

Coleoptera. BAECKMANN (74), Turkestan, *Anoplistes* n. sp. CHABAUT (270), Arabia, *Thorictus* n. sp., *Mordellistena* n. sp. ESCHERICH (469), Turkestan, Tibet, Algeria, *Meloidae*, 9 spp. n. JAKOVLEV (753), Tiflis, *Sphenoptera* n. sp. LESNE (876), Lob-Nor, *Xylogenes* n. sp. LUZE (895), Russian Centr. Asia, *Staphylinidae*, 32 spp. n. LUZE (896), Central Asia, *Staphylinidae*, 2 spp. n. PETRI (1037), Turkestan, *Lixus* n. sp. PIC (1079), Araxes Vall, Mongolia, Buchara etc., *Curculionidae* spp. n. PORTEVIN (1100), Mongolia, *Liodes*, sp. n. REITTER (1150), Transcaucasus, *Eusomus* sp. n. REITTER (1153), Caucasus, *Mycetophagus* n. sp. SCHMIDT (1230), East Buchara, *Thorictus* sp. n. SEMENOV (1275), Transcaucasus, *Stomis*, 2 spp. n. SEMENOV (1281), Lake Balkash, *Nyctiphantus* n. sp. TSCHITSCHERIN (1401), Caucasus, *Trechus* sp. n. TSCHITSCHERIN (1402), N. Persia, *Stomis* n. sp. WATERHOUSE (1491), *Acmaeodera* n. sp., *Steraspis* n. sp. WEISE (1505), Mesopotamia, *Pseudocolaspis* sp. n.

Hymenoptera. FOREL (527), Buchara, list, Gobi, *Formica* sp. n. FOREL (532), Caucasus, ants, list. KONOW (833), Caucasus, *Entodecta* sp. n. RUZSKY (1202), Caucasus and Crimea, *Leptothorax* sp. n.

Lepidoptera. PÜNGELER (1111), Centr. Asia, 10 spp. n. SAUBER (1213), Anklam, *Crambus*, *Phlyctenodes* sp. n. SCHAPOSCHNIKOV (1221), Caucasus, *Macrolep.* Catalogue, 575 spp.

Diptera. SPEISEN (1331), Merv, *Lychnia exornata*.

Hemiptera. JAKOWLEW (757), Koukou-noor, *Palomena* n. sp. HORVATH (717), Turkestan, lists of *Heteroptera* and *Homoptera* spp. n. REUTER (1164), Persia, *Capsidae*, 7 spp. n. REUTER (1166A), Aden, *Capsidae*, 2 n. spp. REUTER (1167), Turkestan, Mongolia, E. Siberia, *Capsidae*, 12 n. spp.

Termitidae. JACOBSON (741), Turkestan, *Hodotermes*, 2 spp. n.

4. AFRICA (TROPICAL & SOUTH). For North Africa see 3 (g.): for Comoro and Aldabra Ids. see 5. Socotra, see 3 (h.).

Insecta. TROTTER (1398), Galls of Erythrea. WASMANN and others (1485), White Nile, Termitophilous *Ins.*, 10 spp. n.

Coleoptera. AURIVILLIUS (57), *Cerambycidae*, 13 spp. n., *genn.* n. BERNHAUER (107), W. Africa, *Dinusa ethiopica* and *Platyola simplex* n. sp. BERNHAUER (108), W. Africa, *Staphylinus*, *Leistotrophus* sp. n.

BERNHAUER (109), *Eleusis*, *Lispinus*, *Holosus*, *Omalium*, *Osorius* spp. n. BOILEAU (143), *Lucanidae*, 3 spp. BOURGEOIS (161), S. Africa, *Chlamydolycus* n. sp. CAMERON (221), Perim, *Diglossa*, 2 spp. n.

DISTANT (382), S. Africa, *Cerambycidae*, monograph. FAUST (481), *Cleonides* many spp. n., n. g. FAUVEL (485), *Staphylinidae* n. spp.

FAUVEL (487), Upper Egypt, *Platyprosopus* sp. n. FAUVEL (489), *Staphylinidae*, 14 spp. n. FELSCH & D'ORBIGNY (494), Cameroons, *Coprides*, 3 spp. n.

GEBIEN (589), Cameroon, *Tenebrionidae*, 19 spp. n., n. g. GEBIEN (590), *Pycnocerini*, 6 spp. n. GESTRO (595), W. Africa, *Coleonomenodera*, 2 spp. n. GESTRO (596), *Platypria* n. sp.

GROUVELLE (639), *Nitid.*, *Colyd.*, *Cucuj.*, *Mycetoph.*, 8 spp. n. HAGEDORN (649), Caffraria, *Scolytotplatypus* n. sp. HARTMANN (663), E. Africa, *Curculionidae*, 46 spp. n., *genn.* n.

HAUSER (664), *Cetoniidae*, 5 spp. n., *genn.* n. HEATH (668), E. Africa, *Calorrhina* and *Eudicella*, n. sp.

- HELLER (674), Cameroons, *Curculionidae*, 14 spp. n. HELLER (675), E. Africa, *Zygopides* sp. n. HORN (709), E. Africa, *Cicindelidae*, 4 spp. n. HORN (711), Cameroons, *Cicindelidae*, 2 spp. n. HORN (712), E. Africa, *Megacephala* sp. n. JACOBY (745), *Chrysomelidae*, 63 spp. n. JORDAN (768), *Anthribidae*, 8 spp. n. JORDAN (770), Brit. E. Africa, *Cerambycidae*, 4 spp. n. KERREMANS (786), Trop. Africa, *Julodines*, descriptions. KOLBE (830), *Copridae*, *Dynastid.*, *Ceton.*, *Psammodes* spp. n. KOLBE (831), Cameroons, *Valgidae* n. g. LEWIS (880), *Histeridae*, 4 spp. n. MANTERO (903), Somaliland and Scioa, *Rhogas*, 3 spp. n. MARSHALL (915), *Hipporrhinus* monograph, 21 spp. n. MÖLLENKAMP (954), W. Africa, *Metopodontus* sp. n. MOSER (964), E. Africa and Sao Thomé, *Cetoniidae*, 11 spp. n. SHARP (969), Natal, *Cassida* sp. n. D'ORBIGNY (996), *Onthophagides*, 24 spp. n. D'ORBIGNY (997), W. Africa, *Onthophagides*, 12 spp. n. D'ORBIGNY (998), *Onthophagus*, 14 spp. n. PÉRINGUEY (1027), S. Africa, *Melolonthini* of, n. genn., n. spp. PÉRINGUEY (1028), S. Africa, about 200 spp. n., *Cicindelidae*, *Carabidae*, *Paussidae*, *Staphylinidae*, *Coprides*, *Ptinidae*, *Tenebrionidae*, *Cantharidae*, *Lagriidae*. PÉRINGUEY (1029), Transvaal, *Dromica*, 2 spp. n., *Anomalipus*, 4 spp. n. PIC (1053), Abyssinia, Niger, *Anthicidae*, 2 spp. n. PIC (1055), Natal, *Malacodermidae* n. sp. PIC (1062), *Malacod.*, *Anobiid.*, *Anthicid.* spp. n. PIC (1064), Caffraria, *Malegia* sp. n. PIC (1066), Natal, *Malacodermid.*, 5 spp. n. PIC (1068), Dunbrody, *Malcod.*, *Notoxus*, *Salpingus* n. sp. PIC (1073), S. Africa, *Malacod.*, 5 spp. n., *Rhipiph.* g. n. PIC (1078), Somali, *Anthicus* n. sp. PREISS (1106), German E. Africa, *Cetoniidae*, 6 spp. n. RAFFRAY (1114), *Pselaphidae*, general work. RÉGIMBART (1125), W. Africa, *Dytiscidae*, 2 spp. n., *Dineutes*, sp. n. REITTER (1154), E. Africa, blind *Carabid.* n. gen. SCHENKLING (1226), Somali land, *Phlocopus* sp. n. THÉRY (1377), E. Africa, *Buprest.* sp. n. WASMANN (1481), *Paussidae*, 6 spp. n. WASMANN (1484A), Congo, n. genn., n. spp., Myrmecophilous *Staphylinidae*. WATERHOUSE (1491), *Buprestidae*, 17 spp. n. WEISE (1503), *Chrysomelidae*, incl. *Cassida* and *Hispidae*, 23 spp. n., n. g. WEISE (1504), *Hispidae*, 2 spp. n. WEISE (1507), *Hispidae*, 3 spp. n.
- Hymenoptera*. ANDRÉ (28), W. Africa, *Mutillidae*, 11 spp. n. ASHMEAD (51), Liberia, *Curriea* sp. n. DU BUYSSON (217), *Chrysid.*, 5 spp. n. DU BUYSSON (219), Damara land, *Masaris* sp. n. CAMERON (223), S. Africa, *Vespidae*, *Bracon.*, *Chalc.* sp. n. CAMERON (224), Cape Colony, *Fossoria*, *Proctotryp.*, *Ichneum.*, *Bracon.*, *Evaniid.*, *Cynip.* spp. n. CAMERON (225), *Thynnidae*, *Ichneum.*, *Bracon.*, *Cynip.*, 20 spp. n., genn. n. CAMERON (237), S. Africa, *Pimplina* n. g. CAMERON (238), Uitenhage, *Apteropompilus* sp. n. ENDERLEIN (456), *Braunsia*, 9 spp. n. ENDERLEIN (457), Somali, n. g. *Rhopalosomidae*. ENDERLEIN (465), Trop. Africa, *Ichneumonidae*, 3 spp. n. FOREL (529), *Carebara* sp. n. FOREL (531), Natal, *Plagiolepis* sp. n. FRIESE (544), *Anthidium* and *Serapis*, 8 spp. n. FRIESE (546), *Apidae*, 10 spp. n. FRIESE (549), *Megachile*, 12 spp. n. FRIESE (551), *Cœlioxy*s revision, spp. n. KONOW (838), *Arge*, 3 spp. n., *Distega* n. g. KIEFFER (793), *Proctotrypidae* and *Evaniidae* spp. n. KIEFFER (794), *Proctotrypidae*, 17 spp. n. KIEFFER (795), *Oberthurella* n. sp. MORICE & SZÉPLIGETI (959), White Nile, *Aculeata*, 3 spp. n., *Iphiaulax* sp. n. MAYR (927), White Nile, *Formicidae*, 2 spp. n. MAYR (928), Cape, *Ponera* sp. n. MOCSÁRY (952), S. Africa, *Chrysis*, 9 spp. n. SZÉPLIGETI (1367), *Braconidae* n. spp. TULLGREN (1404), Cameroons, *Diptoptera* and *Fossoria*, 19 spp. n. WASMANN (1484A), Congo, *Dorylus* n. sp.
- Lepidoptera*. AURIVILLIUS (60), Cameroons, spp. n., genn. n. AURIVILLIUS (61), *Acræa*, 3 n. spp., *Euryphene* and *Diastogyna*, 1 sp. n. AURIVILLIUS (62), *Bombyces*, 9 spp. n. AURIVILLIUS (63), White

- Nile list. AURIVILLIUS (64), Cameroons, *Papilio* n. sp. BETHUNE-BAKER (117), Sierra Leone, *Rhopalocera*, 15 spp. n. CATOR (250), Sierra Leone, *Lycanidae*, 4 spp. n. HEYN (685), E. Africa, *Itema* n. sp. JORDAN (771), *Syntomid.*, 3 spp. n., *Phragmatobia* sp. n., *Agaristidae*, 4 spp. n., *Sindris* sp. n. NEAVE (977), Victoria Nyanza, *Rhopalocera*, with table of distribution and n. spp. REBEL (1121), German East Africa, *Saturniidae* sp. n. ROTHSCHILD (1195), *Sphingidae*, 5 spp. n. ROTHSCHILD (1196), Aruwimi For., *Melanitis* n. sp. SHARPE (1286), Equatorial Afr., *Rhopalocera*, 4 spp. n. SHARPE (1287), Africa equat., *Rhopalocera*, 6 spp. n. SHARPE (1288), Equat. Africa, *Lycanidae*, 5 spp. n. SUFFERT (1353), *Rhopalocera*, many spp. n. SUFFERT (1354), German E. Africa, *Rhopalocera*, 6 spp. n. SUFFERT (1355), E. Africa, *Alena* sp. n. SUFFERT (1355A), *Nymphalidae*, 4 spp. n. SWINHOE (1361), *Agaristidae*, *Lymantr.*, *Aganaiidae*, *Limaecodidae*, *Margaronia* spp. n. SWINHOE (1362), Trop. Africa, *Geometridae*, list, many spp. n. SWINHOE (1363), W. Africa, *Euproctis* sp. n. THURAU (1386), E. Africa, n. g. *Noctuidae*. TRIMEN (1394), E. Africa, *Zerites*, *Lycæna* sp. n. WARREN (1475), *Drepan.*, *Thyrid.*, *Uran.*, *Geometr.* spp. n.
- Diptera*. BALFOUR (77A), Nile, *Culicidae*. BISCHOF (130), Algoa Bay, *Tachinidae*, 4 spp. n. BRUMPT (191), Centr. Africa, *Glossina* n. sp. GILES (603), Angola, *Culex* n. sp. GRÜNBERG (641), Cameroons, *Rhinoestrus* sp. n. THEOBALD (1373), Gambia, *Culicidae*, 6 spp. n. THEOBALD (1374), Senegal, *Culicidae* n. g. THEOBALD (1376), Egypt etc., *Culicidae*, 8 spp. n.
- Aphaniptera*. ROTHSCHILD (1191), Cape Colony, n. spp.
- Hemiptera*. BREDDIN & BÖRNER (173), Natal with Termites, n. sub-order.
- Hemiptera Heteroptera*. BERGROTH (102), Soudan, *Glypsus* n. sp. BERGROTH (103), Cameroons, *Reduviidae*, 3 spp. n. BERGROTH (104), Cameroons, *Megadæum* sp. n. DISTANT (385), Transvaal, *Macrocoris* n. sp. DISTANT (386), Old Calabar, *Chauliops*, Cape Colony, *Henicocephalus* sp. n. DISTANT (387), S. Africa n. gen., n. spp. DISTANT (390), Transvaal, *Heteroptera*, 14 spp. n., gen. n. DISTANT (391), W., E. and S. Africa, spp. n., *Coreidae*, *Pyrrhocoridae*, *Nepidae*. HORVÁTH (715), *Pentatomidae* spp. n., gen. n., St. Thomé Is. list. KIRKALDY (808), S. Africa, *Metrocoris* n. sp. REUTER (1166A), Abyssinia, *Capsidae*, 9 spp. n. REUTER (1168), Congo, *Capsidae*, 6 spp. n. SCHOUTEDEN (1235), *Pentatomidae*, 13 spp. n. SCHOUTEDEN (1237), Guinea, *Pentatomidae*, 8 spp. n. SCHOUTEDEN (1238), Trop. Africa, *Pentatomidae*, n. gen., n. spp. VARELA (1431), Guinea, *Reduviidae*, 8 spp. n. VARELA (1432), Cameroons, *Reduviidae*, 3 spp. n.
- Homoptera*. DISTANT (384), *Cicadidae*, 4 spp. n. DISTANT (393), *Cicadidae*, 4 spp. n. JACOBI (733), Somali Land, Soudan, *Homoptera*, 10 spp. n. JACOBI (735), E. Africa, *Locris*, sp. n. MELICHAR (937), Shoa, Galla and Somali, *Homoptera*, 30 spp. n. SCHMIDT (1229), Benue, *Flatid.* sp. n.
- Aphidae*. THEOBALD (1375), Sudan, *Aphis* sp. n.
- Trichoptera*. ULMER (1418), W. Africa, 3 spp. n., gen. n. ULMER (1419), Cameroons, 3 spp. n., n. g.
- Neuroptera*. WEELE (1501), W. Africa, *Cymothalis* sp. n.
- Termitidae*. SJÖSTEDT (1301), *Termitidae*, 19 spp. n. DESNEUX (369), Cameroons, *Termes* sp. n.
- Embiidae*. VERHOEFF (1434), Cameroons, *Embia* sp. n.
- Orthoptera*. ADELUNG (12), Abyssinia, *Blattidae*, 8 spp. n. BOLÍVAR (144), *Chrotogoninae*, 9 spp. n. BOLÍVAR (145), *Petasia*, *Maura*, 5 spp. n. BOLÍVAR (146), *Pyrgomorphidae*, 5 spp. n. BOLÍVAR (147), *Pæcilocerinae* and *Pyrgomorphinae* spp. n. BORG (155), Cameroons, *Blattidae*, 14 spp. n. BORG (156), Cameroons, *Forficulidae*, 9 spp. n. BURR

(201), *Forficulidae* spp. n. BURR in DISTANT (382), S. Africa, *Bormansia* n. sp. KIRBY (804), *Mantidae*, 5 spp. n., gen. n. REHN (1128), Zulu and Gaboon, 2 spp. n. REHN (1130), S. Africa and Mombasa, *Phasmidae*. REHN (1133), W. Africa, *Acridiidae*, 3 spp. n.

5. MADAGASCAR, including ALDABRA ISLANDS, etc.

Coleoptera. BEGUIN-BILLECOCQ (98), Madagascar and Mayotte, *Apion*, 8 spp. n. BERNHAUER (108), *Medon*, *Eulissus*, *Xantholinus*, *Pachycorinus*. BERNHAUER (109), *Eleusis*, *Osorius*. FAIRMAIRE (473), 125 spp. n., gen. n. FAIRMAIRE (477), *Cicindelidae* 3, *Carabidae* 2, spp. n. FAUVEL (485), *Staphylinidae* n. spp. FAUVEL (491), *Staphylinidae*, 54 spp. n. FLEUTIAUX (518), *Cardiophorus* sp. n. HORN (708), *Pogonostoma* sp. n. PIC (1053), *Anthicidae*, 3 spp. n. PIC (1054), *Ptinus*, 2 spp. n. PIC (1056), *Salpingus*, *Hylophilus* spp. n. PIC (1092), *Xamerpus*, *Theca* sp. n. PIC (1068), *Bruchus*, *Malegia* sp. n. RAFFRAY (1114), *Pselaphidae*, general work, n. g. SCHENKLING (1226), *Phlaeocopus* sp. n.

Hymenoptera. BUYSSON (217), *Chrysid.*, 2 spp. n. FOREL (527), *Strumigenys* sp. n. KIEFFER (796), Mad., Nossi-Bé, Bourbon, *Chalcidinae* n. gen., n. spp. SZÉPLIGETI (1366), *Camarota* n. sp.

Lepidoptera. SWINHOE (1362), *Geometridae*, 17 spp. n.

Diptera. DYÉ (443), *Anophelinae*.

Hemiptera. DISTANT (384), *Cicada* sp. n. HORVÁTH (715), *Pentatomidae*, 10 spp. n. SCHOUTEDEN (1238), *Scotinophara*.

Coccidae. MARCHAL (909).

Termitidae. SJÖSTEDT (1301), 5 spp. n.

Orthoptera. BOLÍVAR (146), *Phymateus*, 2 spp. n. BOLÍVAR (147), *Pyrgomorphinae* spp. n. BURR (201), *Forficulidae* spp. n.

6. TROPICAL and EASTERN ASIA, incl. JAPAN and TIBET.

For outskirts see also 3 (a.), (g.), (h.). Arabia, see 3 (h.).

Insecta. PAVIE (1011A), Fauna of Indo-China.

Coleoptera. ARROW (38), Penang, *Ochodæus* sp. n. AURIVILLIUS (57), Malacca, *Glenae* sp. n. BERNHAUER (108), Shanghai, *Eulissus* sp. n. BERNHAUER (109), Tonkin, *Lispius*, Annam, *Trogophilæus* spp. n. BOILEAU (141), Kashmir, *Dorcus* sp. n. BOILEAU (142), Madura, *Dorcus* sp. n. BOILEAU (143), India and Burma, *Lucanidae*, 4 spp. n. BOUCOMONT (159), India, China, etc., *Enoplotrupes*, *Geotrupes*, 9 spp. n. BOURGEOIS (160), S. India and Ceylon, *Malacoderm.*, 5 spp. n. CAMERON, Perim Is. See Africa. FAUST (481), India, China, Japan, *Cleonides* spp. n. FAUVEL (482), India and Burma, *Staphylinidae*, 27 spp. n. FAUVEL (485), India, Ceylon, etc., *Staphylinidae* n. spp. GROUVELLE (640), Bangkok, *Heterocerus* n. sp. HAGEDORN (648), Darjiling, Japan, *Scolytidae*, 5 spp. n. HORN (713), Ceylon, *Cicindelidae* list, 3 spp. n. JACOBY (744), India, *Chrysomelidae*, 43 spp. n. JACOBY (749), Tonkin, *Sagra* n. sp. JORDAN (767), Tonkin, 12 spp. n., Sikkim, 1 sp. n. JORDAN (772), Burma, *Anthribidae*, 2 spp. n. KOKUJEV (827), W. China, *Ichneumonidae* spp. n. KOLBE (831), Tonkin, Perak, Andamans, *Valgidae* n. g. LESNE (876), India, *Sinoxylon* n. sp. LEWIS (880), India, *Histeridae*, 3 spp. n. MAINDRON (899), *Tricondyla* n. sp., *Crepidopterus* n. sp. MÖLLENKAMP (954), Himalaya, *Prosopocælus* sp. n. MOSER (965), Tonkin, Perak, Assam, *Vulgides* n. spp. OBERTHÜR (989), Darjeeling, *Sphingidae* n. g. PETRI (1035), India, *Lixus*, 2 spp. n. PIC (1058), Japan, *Malachiidae*, 2 spp. n. PIC (1064), Tien-tsin, *Scaptia* sp. n. PIC (1065), Japan, *Dichelotarsus* sp. n. PIC (1069), Tonkin, *Laria* n. sp.

- PORTEVIN (1100), Darjeeling, Mou-pin, *Silphidae*, 5 spp. n. RAFFRAY (1114), incl. India and Japan, *Pselaphidae*, general work. REITTER (1148), Japan, *Cionus* n. sp. REITTER, Afghanistan and Gobi: see Pal. Col. SCHWARZ (1266), Ceylon, *Adelocera* sp. n. SPAETH (1327), Burma, *Cassida* sp. n. THÉRY (1377), Mysore, *Buprest.* sp. n. THÉRY (1378), Ceylon, *Buprestides*, 14 spp. n. WASMANN (1481), India, *Paussidae*, 7 spp. n. WASMANN (1484A), Bombay, *Doryloxenus*, 2 spp. n., *Discoaxenus* n. g. WATERHOUSE (1491), Tonkin, India, Andamans, *Buprestidae*, 5 spp. n. WEISE (1503), China, *Dioryctus* sp. n. WEISE (1504), Tonkin, India, *Hispidæ*, 2 spp. n. WEISE (1507), India, Ceylon, *Hispidæ*, 3 spp. n. ZANG (1546), Assam, *Basilianus* sp. n.
- Hymenoptera.* ASHMEAD (46), Japan, Fossoria, *Bethylidae*, *Proct.*, *Cynip.*, *Chalc.* n. spp.; Formosa, *Eupelmus* n. sp. ASHMEAD (50), Ceylon, n. sp. *Alysidae.* DU BUSSON (218), China, Malacca, Andamans etc., *Vespa*, 5 spp. n. CAMERON (222), Singapore, *Piagetia*, *Icaria*, *Bracon.* spp. n. CAMERON (226), Khasia hills, *Cryptinae*, 26 spp. n. CAMERON (227), Khasia hills, *Bembex* sp. n. CAMERON (229), Japan, *Dielis* and *Eumenes* n. sp. CAMERON (230), India, *Apidae*, *Vespidæ*, *Fossor.*, *Ichn.*, *Chalcid.* CAMERON (231), *Odynerus* spp. n., *Epyris* and *Haliphera* sp. n., n. g. *Braconid.* CAMERON (232), N. India, *Apidae* spp. n., *Fossores* spp. n., *Ichneumonidae* spp. n. CAMERON (233), N. India, n. spp. *Apidae*, *Mutillides*, *Fossores*, *Ichneumonidae*. CAMERON (234), India, n. spp. *Braconidae*, *Fossoria*, *Vespidæ*; Ceylon, *Megachile* n. sp. CAMERON (235), Deesa, *Juartinia* n. sp. CAMERON (236), India, *Athalia* n. sp. CAMERON (241), India, *Ichneumonidae*, 14 spp. n., genn. n. ENDERLEIN (456), Ceylon, *Braunsia* sp. n. FOREL (532), N. India, Kashmir, *Formicidae*, 6 spp. n. FRIESE (548), Nicobars, *Megachile* sp. n. MOCSÁRY (953), *Siricidae*, Japan, 1 sp. n., Tonkin, 4 spp. n. MOCSÁRY (951), Tonkin, *Clavellaria* sp. n. NURSE (985), India, *Apidae*, many n. spp. NURSE (986), India, *Chrysid.* 7 spp. n., *Fossoria*, 2 spp. n., *Eumenes* sp. n. KIEFFER (794), India, Burma, *Proctotryp.*, 3 spp. n. SCHULZ, India, 4 spp. *Crabro*, Zeitschr. Breslau xxix, p. 101.
- Lepidoptera.* BUSCK (206), China, *Coleophora* sp. n. DIETZE (380), Japan, *Eupithecia* sp. n. DRUCE (408), Malay States, *Lycanidae* list. DUDGEON (416), Sikkim and Bhutan, *Noctuidæ*, Cat. DYAR (428), Japan, *Epipyrops* sp. n. EHRMAN (447), Ceylon, *Ornithoptera* sp. n. FAWCETT (492), Sikkim, *Rhopalocera*, 10 spp. n. FRUHSTORFER (568), Malay states, *Felicota* n. sp. GREEN (621), Ceylon, *Danaüs alcippus*. HAMPSON (654), India, *Notodontidae*, 2 spp. n. HEYLAERTS (682), Tonkin, *Chalia* n. sp. MANDERS (900), Ceylon, *Rhopalocera*, distribution. MOORE (956), India, *Pieridae*, 1 sp. n. Baluchistan, *P. machaon*, NURSE, p. 723, J. Bombay Soc. xv. OBERTHÜR (988), Siao-Lou, *Rhagastis* sp. n. PÜNGELER (1110), Japan, *Noctuidæ*, *Geometridæ*, 4 spp. n. SWINHÖE (1361), Singapore, *Bombyces*, 2 spp. n., Poona, *Thosea* sp. n. SWINHÖE (1363), Khasia hills, *Scopelodes* sp. n., *Hypereschea* sp. n. SWINHÖE (1364), Perak, *Ercheia*, sp. n. WARREN (1476), India, *Cryptoloba* sp. n., Tonkin, *Uliura* and *Ptychopoda* n. sp. YOUNG (1542), India, *Rhopalocera*, distribution.
- Diptera.* BEZZI (125), Ceylon, *Empidæ*, 4 spp. n., India, Singapore, 3 spp. n., Indo-Australian *Empidæ* list. COQUILLETT (314), India and Ceylon, *Acalyptrate*, 4 spp. n. GILES (601), India, *Corethra* n. sp. GILES (604), Himalaya, *Howardina* sp. n. JAMES & LISTON (760), India, *Anopheles*, with sp. n. KERTÉSZ (789), India, *Supromyzides* n. g. MEIJERE (934), Darjiling, Ta-tsien-lu, n. spp. RICARDO (1172), Ceylon, *Udenocera* n. g. *Tabaninae*. SPEISER (1331), Burma, *Ornithomyia obscurata*. THEOBALD (1371), Malay States, *Culicidae* n. genn., n. spp.
- Aphaniptera.* ROTHSCHILD (1191), India, Japan n. spp.
- Hemiptera.* BREDDIN (167), *Chilocoris*, 2 spp. n. BREDDIN (168),

Tonkin, 11 spp. n., Sikkim, sp. n. *Pentatomidae*. DISTANT (383), India, Ceylon, Burma, *Reduviidae-Capsidae*. DISTANT (384), India and Pahang, *Cicadidae*, 8 spp. n. DISTANT (385), Ceylon, n. g. *Naucoridae*. DISTANT (386), India, *Glossopelta*, Ceylon, *Cercotmetus* n. sp. DISTANT (387), China, *Fulgentius* n. g. *Capsidae*, Singapore, *Mertila* n. g. DISTANT (392), Himalaya, Burma, *Anthocoridae*, 3 genn. n. DISTANT (393), Japan, China, Formosa, Laos, *Cicadidae* spp. n. HORVÁTH (714), Malacca, Burma, *Colobathristinae* n. spp. HORVÁTH (718), Japan, *Plea* n. sp., Ceylon, *Micronecta* n. sp. JAKOVLEV (756), Sé-Tschuen, *Geocoris* sp. n. KIRKALDY (813), India, Cochin China, *Notonectidae*, 2 spp. n. MARTIN (918), S. India, n. g. *Tesseratominae*. MATSUMURA (922), Japan, *Cercopidae*, 19 spp. n., *Cicada* sp. n. REUTER (1162), Setschuan, *Stenodema*, 3 spp. n. REUTER (1165), Corea, *Capsidae*, 2 spp. n. REUTER (1166), China and Mou-Pin, *Capsidae* spp. n. SCHMIDT (1229), Ceylon, *Ormenis* sp. n. SCHOOTEDEN (1236), Hainan, India, *Scutellerides*, 2 spp. n. Ceylon, brief notes on fauna, *Spolia Zeylan.* i, pp. 114-116. *Coccidae*. GREEN (620), Ceylon, *Lecanium* n. spp. *Termitidae*. DESNEUX (369), Annam sp. n., Ceylon sp. n. DESNEUX (373), Kashmir, *Termopsis* n. sp. *Odonata*. FÖRSTER (536), Upper Malacca, Sikkim, 4 spp. n. WILLIAMSON (1531), Burma and Lower Siam, *Calopterygine* list, 1 sp. n. WILLIAMSON (1532), Formosa, *Psolodesmus* sp. n. BOLÍVAR (144), India, *Chrotogonus* sp. n. BOLÍVAR (147), India, *Pacilocerus* n. sp. BURR (201), India, Japan, China, Tibet etc., *Forficulidae* n. spp. HANCOCK (655), Ceylon, *Tettigidae* monograph, 9 spp. n. KIRBY (804), Nepal, Ceylon, *Mantidae*, 2 spp. n. KIRBY (805), *Phasmidae*, Tonkin, 6 spp. n., Singapore, Penang, 3 spp. n. KRAUSZE (843), Tonkin, *Phaneropteridae*, 2 spp. n. KRAUSZE (844), Tonkin, *Conocephalidae*, 2 spp. n. NAVÁS (975), Himalaya, *Mantidae*, *Acridid.*, 4 spp. n. REHN (1128), Lower Siam, *Blattidae*, 5 spp. n. REHN (1130), Siam, *Phasmidae*, Japan, n. spp. REHN (1133), Siam, *Scelimena*, Japan, *Erianthus* sp. n.

7. ASIATIC ARCHIPELAGO, including PAPUA. (For islands beyond Papua see 2. Insular.)

Insecta. DYAR, Philippines, notice of a general work of 1895 by ELERA; J. N. York Ent. Soc. xii, pp. 58, 59. *Coleoptera*. ARROW (38); Java *Ochodæus* n. sp. AURIVILLIUS (57); *Glenea* 7 spp. n. BERNHAUER (108); Mentawai, *Holosus*, Sumatra, *Pinophilus* sp. n. BERNHAUER (109); Nias Sumatra, *Lispinus Holosus*, Mentawai *Osorius*. BOILEAU (143); Sumatra, *Hemisodorus* sp. n. FAUVEL (482); Java, Borneo, etc. *Museochara* n. sp. FAUVEL (485); *Staphylinidae* n. spp. FAUVEL (486); Sumatra, *Lyctus* n. sp. FAUVEL (490); New Guinea, *Staphylinidae*, 2 n. spp. GEBIEN (590); Borneo, *Phægonius* n. sp., Java, *Spirobus* n. sp. HAGEDORN (650); Java, *Scolytoplastypus* sp. n. HAUSER (664); N. Guinea, *Vulgus* sp. n. HAUSER (665); Key islds., *Nemophas* n. sp. HORN (710); N. Guinea, *Cicindela* sp. n. JACOBY (743); New Guinea, *Chrysomelidae*, 54 spp. n. JORDAN (767); Sumatra, Borneo, Celebes, Philippines, *Anthribidae* spp. n. JORDAN (772); Java, Celebes, New Guinea, Ternate, *Anthribidae*, 14 spp. n. KOLBE (831); Sumatra and Borneo, *Valgidae* n. genn., n. spp. LEWIS (880), Borneo, *Niponius* sp. n.; Java, *Platysoma* n. sp. MÖLLENKAMP (954); Borneo and Sumatra, *Lucanidae*, 5 spp. n. MOSER (965); Borneo, Sumatra, *Valgidae* spp. n. PETRI (1037); Borneo, Java, *Lixus* sp. n. PIC (1064); Sumatra, *Mesocaelopus* sp. n. RAFFRAY (1114); *Pselaphidae*, general work. SPAETH (1327); Java, Sumatra, Mentawai, Borneo, *Cassidae*, 4 n. spp. WASMANN (1481); Java, *Paussus*, 2 spp. n. WEISE

(1504); Borneo, Celebes, Sumatra, New Guinea, *Hispidae* n. spp. ZANG (1545); Moluccas, *Passalidae* n. sp. ZANG (1546); Borneo, *Passalidae*, 2 gen. n.

Hymenoptera. ASHMEAD (44); Philippines, *Apidae* n. spp., *Fossor.*, 2 spp. n., *Hedychrum* sp. n., *Telenomus* sp. n., *Braconidae* sp. n., *Ichn.* n. sp. ASHMEAD (47); Philippines, *Apidae*, 2 spp. n., *Fossoria*, 7 spp. n., *Mutillidae*, 1 sp. n., *Bethylidae*, 3 spp. n., *Proctotrypidae*, 1 sp. n., *Chalcid.*, 7 spp. n., *Evanidae* sp. n., *Ichneumonidae*, 12 spp. n., *Braconidae*, 10 spp. n. ASHMEAD (48); Philippines, Catalogue with spp. n. ASHMEAD (53); Philippines, fig-insects, 2 spp. n. BUYSSON (217); Java, *Chrysis* n. sp. CAMERON (222); Ternate, *Bracon* n. sp. COCKERELL (282); Philippines, *Ctenoplectra* sp. n. ENDERLEIN (456); *Braunsia*, 3 spp. n. FRIESE (541), Tenimber-Larat, *Vespidae* n. g. FRIESE (548), *Megachile* sp. n. FRIESE, Java, list, *Allg. Zeitschr. Ent.* pp. 138-140. KIEFFER (793), Java, *Evanidae* spp. n. KIEFFER (794), Sumatra, New Guinea, Ternate, *Proctotryp.* 7 spp. n. KRIEGER (845), New Guinea, *Trichomma* sp. n. SAUSSURE (1218), Borneo, *Megischus* n. sp. SCHULZ (1255), New Guinea, short list, *Celiacys* sp. n. SZÉPLIGETI (1367), Celebes, New Guinea, *Braconidae* n. spp. TULLGREN (1405), Java, *Scolia*, 4 spp. n.

Lepidoptera. BETHUNE-BAKER (116), Brit. New Guinea, *Lycenidae*, *Erycinid.*, *Bombyc.* s. l., *Noctuid.*, many spp. n. BETHUNE-BAKER (118), Halmahera, Borneo, *Arhopala*, 3 spp. n. DANNATT (351), Gilolo, *Delias* n. sp. H. H. DRUCE (407), Borneo and New Guinea, *Lycenidae*, 4 spp. n. FRUHSTORFER (566), Borneo, *Pseudamathusia* n. sp., New Guinea, *Dicallaneura* sp. n. FRUHSTORFER (567), Obi, *Euplaea* n. sp. FRUHSTORFER (569), Engano, *Rhopalocera* list. FRUHSTORFER (570), New Guinea, *Calliptera* sp. n. FRUHSTORFER (571), Celebes, *Elymnias* n. sp. FRUHSTORFER, Soc. ent. xix, p. 138, New Guinea, *Tenaris* n. sp. JORDAN (771), New Guinea, *Heterusia* sp. n. LATHY (860), Gilolo, *Cyrestis* sp. n. MABILLE (898), New Guinea, 3 n. spp., Celebes, 1 n. sp. PIEPERS & SNELLEN (1084), Java, *Lithosiidae*, catalogue, 5 spp. n. PIEPERS & SNELLEN (1085), Java, *Syntomidae*, 1 sp. n. ROTHSCHILD (1194), New Guinea, *Papilion.*, *Pier.*, *Erycin.*, *Nymphal.*, *Geometr.* spp. n. ROTHSCHILD (1195), New Guinea, *Sphingidae*, 2 spp. n. ROTHSCHILD (1197), New Guinea, *Abisara* sp. n. ROTHSCHILD (1198), New Guinea, *Opodiphthera* n. sp. SHELFOED (1289), Borneo, *Rhopalocera* n. spp. SWINHÖE (1361), Borneo, many spp. n., Celebes, *Eupterote* sp. n., Fergusson isld. *Agonis* sp. n. SWINHÖE (1363), Philippines, *Eulype* sp. n. SWINHÖE (1364), 13 spp. n. THIEME (1381), Nias isld., *Stictoplaea* sp. n. SNELLEN (1428), Java, *Tineidae*, 3 spp. n. VAN DEVENTER (1429), Java, *Tineidae*, 166 spp. n. WARREN (1476), *Geometridae*, 7 spp. n., *Thyrid.* 2 spp. n.

Diptera. BEZZI (125), New Guinea, *Empidae* spp. n. GILES (603), Philippines, *Culicidae*, 8 spp. n. LUDLOW (891), Philippines, *Culicidae* sp. n. LUDLOW (892), Philippines, *Culicidae*, 2 spp. n. MELJERE (934), Java, n. spp. MELJERE (935), Aru and Halmahera, *Halophilus* and *Pseudoformosia* n. sp. SPEISER (1328), New Guinea, *Olfersia*, 2 spp. n. SPEISER (1331), Java, Sumatra, New Guinea, *Hippoboscidae*, 3 spp. n. STEIN (1343), Java, *Anthomyiidae*, 10 spp. n.

Aphaniptera. ROTHSCHILD (1191), New Guinea, n. sp.

Hemiptera. BREDDIN (168), *Pentatomidae*, 10 spp. n. BREDDIN (169), Buru, *Plisthenes* n. sp. DISTANT (387), Ternate, *Capsidae* n. sp. DISTANT (389), Borneo, *Coreidae* n. g. DISTANT (393), Borneo, *Cicada* sp. n., Sumbawa, *Cryptotympana* sp. n. HORVÁTH (714), *Colobathrinidae* spp. n., genn. n. HORVÁTH (718), New Guinea, *Micronecta* sp. n. KIRKALDY (813), Sumatra and Celebes, *Notonectidae*, 2 spp. n. SCHMIDT (1228), Sumatra, *Flatides*, 16 spp. n., n. g. SCHMIDT (1229), *Flatides*, 8 n. spp.

Coccidae. GREEN (622), Java, 4 spp. n.

Neuroptera. WEELE (1501), *Ascalaphidae*, 4 spp. n.
Odonata. MARTIN (919), Java, *Macromia* n. sp.
Orthoptera. BURR (210), Borneo, *Forficulidae* spp. n. CAUDELL (254), Philippines, *Forficulidae* sp. n. KIRBY (804), Lombok, *Humbertiella* sp. n. KIRBY (805), Borneo, *Necrosia* n. sp., New Guinea, *Eurycnema* n. sp. NAVÁS (975), Philippines, 4 spp. n. REHN (1130), Sumatra and Obi, *Phasmidae*. REHN (1133), Labuan, N. Borneo, *Erucius* and *Mazarredia* sp. n.

8. AUSTRALIA and TASMANIA. (For New Zealand see 2. Insular.)

Insecta. FROGGATT (562), *Micromus* n. sp., *Braconidae* n. sp., *Cynipidae* n. sp. GOUDIE & LEA, specially *Coleoptera*, Gippsland, pp. 51-56, Victorian Natural. xxi. KERSHAW, Victorian Natural. xx, pp. 122-125, Launching Place, short lists.

Coleoptera. BERNHAUER (108), *Oxytelus* n. spp., *Atheta* n. sp., *Zyras* n. sp. BLACKBURN (132), *Trox* revision, 6 spp. n. BLACKBURN (133), *Bolboceras* revision, spp. n. BLACKBURN (134), *Copridae* spp. n. FAUVEL (485), *Staphylinidae* n. spp. KERSHAW, Victorian Natural. xx, pp. 150, 151, Buffalo Mountains. LAMEERE (854), *Toxotes* sp. n. LEA (561), *Cuculionidae* n. g. LEA (863), Australia and Tasmania, *Cryptocephalides* revision, many n. spp. LEA (862), *Cuculionidae*, many spp. n. LEA (864), incl. Tasmania, *Staphyl.*, *Rhysod.*, *Cucuj.*, *Copr.*, *Rhipiph.*, *Oedemer.*, *Curcul.*, *Scolyt.*, *Chrysom.* n. spp. LEWIS (880), *Hister* sp. n. OHAUS (990), *Anoplognathides* revision. PIC (1064), *Thaptor* n. sp. RAFFRAY (1114), Austr. and Tasm., *Pselaphidae*, general work. RAINBOW (1116), Sydney, *Stigmodera* and *Horistonotus* sp. n. SLOANE (1310), Tropical Australia, *Cicadellidae* 3, *Carabidae* 5, spp. n. SLOANE (1311), *Carabinae*, revision, n. spp.

Hymenoptera. CAMERON (240), *Pristaulacus* sp. n. COCKERELL (282), *Saropoda* sp. n., *Anthoglossa* sp. n. COCKERELL (283), *Halictinae*, revision, n. spp. ENDERLEIN (458), Adelaide, n. g. *Thynnidae*. KIEFFER (793), *Evanidae* spp. n. SZÉPLIGETI (1367), *Braconidae* n. sp.

Lepidoptera. FRUHSTORFER (565), Queensland, *Tachyris* sp. n. LOWER (888), incl. Tasmania, *Tineidae*, 33 spp. n. MABILLE (898), *Padraona*, *Ocybadistes* n. sp. MEYRICK (946), Australian *Gelechiidae*, 207 n. spp., 39 n. genn. TURNER (1408), *Notodontidae* and *Syntomidae*, 9 spp. n. TURNER (1409), *Geometridae*, revision. TURNER (1410), revision of *Thyrididae*, 1 sp. n., *Pyralidae*, many spp. n. TURNER (1411), *Bombyces* *Noctuidae*, *Geometr.*, *Tineid.*, many spp. n. TURNER (1412), Austral. and Tasman., *Lymantriidae*, 4 spp. n. WARREN (1476), *Geometridae*, 3 spp. n., *Thyrid.*, 1 sp. n. WATERHOUSE (1493), *Hesperidae*, erroneously listed. WATERHOUSE (1494), *Heteronympha* sp. n. WATERHOUSE & TURNER (1495), *Lycanidae*, doubtful species.

Diptera. BEZZI (125), *Empidae* spp. n. COQUILLETT (314), W. Australia, *Tachina* n. sp. RAINBOW (1117), *Nycteribia* n. sp.

Aphaniptera. ROTHSCHILD (1191), n. spp.

Hemiptera. BERGROTH (105), Queensland and Tasmania, *Morbora* 2 spp. n. DISTANT (384), *Cicadidae* sp. n. DISTANT (387), *Armachanus*, *Capsidae*, n. sp. DISTANT (388), North Queensland, *Heteroptera*, genn. n., spp. n. DISTANT (391), Queensland, *Mononyx* sp. n. DISTANT (393), *Cicadidae*, 3 spp. n. GODING & FROGGATT (613), Austral. and Tasman., monograph, *Cicadidae*, 119 species. KIRKALDY (813), *Anisops*, 3 spp. n. SCHMIDT (1229), Queensland, *Flatides*, 3 spp. n. SCHOUTEDEN (1236), N. S. Wales, *Philia* n. sp.

Coccidae. GREEN (625), *Chionaspis*, *Antonina* sp. n. GREEN (624), Victoria, 5 spp. n.

Neuroptera. KEMPNY (785), *Chrysopa* sp. n. FROGGATT (557), *Embiidae*, 2 spp. n., *Croce* n. sp. WEELE (1501), *N. W. Austral.*, *Acanthacalis* sp. n.

Orthoptera. BOLÍVAR (147), Sydney, *Monistria* n. sp. KIRBY (805), *Phasmidae*, 2 spp. n. REHN (1128), 3 spp. n. TEPPER (1370), *S. Australia*, *Blattidae*, *Mantidae*, *Acrididae*, *Gryllacris* n. spp.

9. NORTH AMERICA. For Bahamas and Bermudas see

11. Antilles.

Insecta. The Insects of Alaska, MERRIAM and others (940). Canada, various notes, Ottawa Natural. xvii, pp. 216-220. BEUTENMÜLLER (119), New York Galls. CURRIE (333), Kootenay, collecting trip. GODMAN (614). SCHAEFFER, S. Texas, peculiarities, J. N. York ent. Soc. xii, pp. 63, 64. SNOW (1325), Arizona, Collector's list. HEIDEMANN and others, Plummer's isld. Maryland, P. ent. Soc. Washington vi, pp. 22, 23.

Coleoptera. BERNHAUER (109), Michigan, *Trogophloeus* sp. n. BLANCHARD (135), California, *Dromaeolus* n. sp. BRUES (188), Texas, *Ecitopora* sp. n. CASEY (248), *Staphylinidae*, 2 n. genn., *Anthicidae* n. genn., *Curculionidae*, 3 spp. n. CHITTENDEN (263), *Sphenophorus*, 2 spp. n., and (264), 4 spp. n. CHITTENDEN (266), Arizona, *Latheticus* n. sp. CHITTENDEN (1498), Illinois, *Obeira* n. sp. COQUILLET (317), Louisiana, *Culex* n. sp., Massachusetts, *Metriocnemus* n. sp., Canada, *Cuterebra* n. sp., *Bischofia* n. sp. DAVIS (353), New Jersey, *Neoclytus* sp. n. DURY Ohio, *Melastini*, 28 spp., Ent. News Philad. xv, p. 52. FELT & JOUTEL (495B), *Saperda*, monograph, 1 sp. n. FUCHS, Tulare, trip, Ent. News Philad. xv, pp. 337-339. KNAUS, Sacramento Mts., list, Ent. News Philad. xv, pp. 152-157. LENG, N. Jersey, J. N. York ent. Soc. xii, p. 64. NEEDHAM, Beetle drift on Lake Michigan, Canad. Ent. xxxvi, pp. 294-296, and 335. PIC (1064), *Ptinus* sp. n. PIC (1068), *Ptinus*, 2 spp. n.

PIERCE (1086), Nebraska, *Rhipiphorus*, *Myiodites*, *Stylops* n. spp. RAFFRAY (1114), *Pselaphidae*, general work. SCHAEFFER (1220), Rio Grande, Florida etc., n. spp., n. genn. SCHWARZ (1262), Los Angeles, *Pseudoweisea* n. sp. SCHWARZ, Maryland, *Hormops*, P. ent. Soc. Washington vi, p. 11. SHERMAN, N. Carolina, *Cicindelidae*, Ent. News Philad. xv, pp. 26-32, 112. SKINNER (1302), Arizona, *Meloidae*, 3 spp. n. STEVENSON, Canada, *Aphodius erraticus*, Canad. Ent. xxxvi, p. 164.

Hymenoptera. ASHMEAD (42), *Siricidae*, 4 spp. n. ASHMEAD (52), Utah, *Torymus* sp. n. BRADLEY (164), Oregon and Colorado, *Cratichneumon*, 2 spp. n. BRUES (190), *Proctotrypidae*, 3 spp. n. BUYSSON (217), California, *Chrysis* n. sp. CAMERON (228), "N. Mexico," *Nysson* sp. n. COCKERELL (280), *Epeolus*, 6 spp. n. COCKERELL (281), New Mexico, Colorado, *Apidae*, 5 spp. n. COCKERELL (284), California, *Anthophora* sp. n. COCKERELL (286), New Mexico, *Apidae*, 3 spp. n. COCKERELL (289), New Mexico, *Apidae*, 3 spp. n. COCKERELL (291), Southern U. S., *Apidae* spp. n. COCKERELL (292), Colorado, *Notmuda*, 13 spp. n. COCKERELL (293), S. California, *Apidae*, sp. n. COCKERELL, New Mexico, bees, Ent. News Philad. xv, p. 171. CRAWFORD (327), New Jersey, *Halictus*, 2 spp. n. FELT (495A), New York and Colorado, *Ophionini*, 4 spp. n. FOREL (529), British Columbia, *Formicidae* var. n. FOREL (530), Texas, *Acanthostichus* sp. n. FYLES (574), Quebec, *Torymus* n. sp. FYLES (575), *Amesolytus* sp. n. GRAENICHER (619), Wisconsin, *Andrena*, 3 spp. n. KIEFFER (793), *Proctotrypidae* and *Evaniidae* spp. n. KONOW (838), Texas, *Periclista* n. sp. ROBERTSON (1182), *Apidae*, 3 spp. n. SWENK (1358), Nebraska, *Colletes* sp. n. TITUS (1389), Illinois, n. g. *Osmiinae*. TITUS (1390), *Osmiinae*, 7 spp. n. VACHAL (1424), *Halictus*, 14 spp. n. VIERECK

- (1445), *Odontophotopsis*, 11 spp. n. VIERECK (1446), *Fossoria*, 10 spp. n. VIERECK (1447), *Parnopes*, 7 spp. n. VIERECK (1448), New Jersey, *Perdita*, 2 spp. n. VIERECK (1449), Arizona, *Tachysphex* n. sp. VIERECK (1450), Delaware, *Apidae* n. g. VIERECK (1451), Nevada, *Apidae* n. g. VIERECK (1452), Wisconsin, *Habrocryptus* sp. n. VIERECK (1453), Pennsylvania, *Ammoplanus* sp. n. VIERECK and others (1454), Oregon, British Columbia etc., *Apidae*, synopsis with spp. n. VIERECK & COCKERELL (1455), New Mexico, *Philanthidae*, 3 spp. n. VIERECK, Vancouver, *Thyreoporus latipes*, Canad. Ent. xxxvi, p. 51. WHEELER (1518), Utah and Colorado, *Formicidae*, 4 spp. n. WHEELER (1519), Texas, *Colobopsis* n. sp. WHEELER (1520), Catalina isld., 8 spp. WHEELER (1521), North Carolina, 61 spp. WHEELER (1522), Colorado, *Formica* n. sp.
- Lepidoptera*. Distribution of *Sphingidae*, WEBSTER (1500).
- ANDERSON (26), British Columbia, catalogue. ASHMEAD (45), New York, *Thymaris* sp. n. BARNES (88), chiefly Texas and Arizona, many spp. n. BRIMLEY, N. Carolina, *Sphingidae*, *Saturni*, *Ceratocamp*, Ent. News Philad. xv, pp. 120-126. BUSCK (203), British Columbia, *Tineidae*, 34 spp. n., n. g. BUSCK (204), Arizona, *Tineidae* n. g. BUSCK (205), Colorado, *Ethmia* sp. n. DOD, Alberta, list (continued from 1901) Canad. Ent. xxxvi, pp. 345-355. DOLL, Brownsville, short list, J. N. York ent. Soc. xii, pp. 126, 127. DYAR (420), British Columbia, long catalogue, 14 spp. n. DYAR (422), *Rhopalocera*, *Bombyc*, *Noct*. n. spp. DYAR (424), United States, *Pyralidae*, 9 spp. n. DYAR (427), British Columbia, *Diacrisia* sp. n. DYAR (430), *Tortricidae* n. g. DYAR (431), *Noctuidae*, *Notodontidae*, 5 spp. n. DYAR (432), *Sesidae*, *Cochlididae*, *Noctuidae*, *Geometridae*, *Pyralidae*. DYAR (433), Mackenzie, *Oeneis* n. sp. DYAR (435), *Illice*, 4 spp. n. DYAR (436), North Carolina, *Lactilia* n. sp. DYAR (437), Rhode isld., *Ancylis* n. sp. DYAR (438), *Scoparia*, 4 spp. n. DYAR (439), British Columbia, *Noctuidae*, 8 spp. n. FERNALD (497), Ohio, n. g. *Choreutinae*. FIELD, New Hampshire, *Eurema lisa*, Psyche xi, p. 102. FLETCHER (515), Canada, *Phyciodes*, *Thecla*, *Pamphila* sp. n. FLETCHER (516), Canada, *Rhopalocera*, 3 spp. n. FYLES (576), Quebec, *Trichotaphe* n. sp. GIBSON, Meech Lake, Quebec, Ottawa Natural. xvii, pp. 204-206. GRINNELL (634), California, *Thanaos* sp. n. HEATH, Manitoba, supplementary list, Canad. Ent. xxxvi, pp. 269-272. KEARFOTT (776), British Columbia, *Tortricidae*, 7 spp. n. KEARFOTT (777), Assinaboia, *Proteopteryx* sp. n. NEWCOMB, Michigan, *Rhopalocera* in 1903, Ent. News Philad. xv, pp. 204-206. NEWCOMB, Michigan, *Cocytius cluentius*, Ent. News Philad. xv, p. 345. SKINNER (1303), Brit. Columbia, *Thecla* sp. n. SMITH (1313), *Noctuidae*, Calgary, 7 spp. n. SMITH (1314), U. S., Canada etc., *Noctuidae*, 12 spp. n., n. g. TAYLOR (1369), Vancouver, *Ennominae* n. g. WARREN (1474), Colorado, *Lampropteryx* and *Caripeta* n. spp. WARREN (1477), Colorado, Oregon, *Geometridae*, 7 spp. n.
- Diptera*. ADAMS (2), 27 spp. n. ADAMS (9), Colorado and Texas *Siphonella*, 2 spp. n. BACK (73), *Asilidae*, 6 spp. n. BEZZI (128), *Dipterous* galls in N. America, historical, statistical. BRIMLEY & SHERMAN, List of the *Tabanidae* (Horse-flies) of North Carolina, Ent. News Philad. xv, pp. 270-275, correction, t. c. p. 302. BRITTON (183), Connecticut, *Culicidae*. COCKERELL (287), Colorado and New Mexico, *Cecid*, 3 spp. n. COQUILLETT (313), Georgia, *Chlorops* n. sp. COQUILLETT (315), 52 spp. n., n. genn. COQUILLETT (316), New Jersey, *Culex* sp. n. COQUILLETT (318), Southern Texas, 9 spp. n. DYAR (426), *Culex* n. sp. DYAR (429), British Columbia, *Culicidae*. FELT (495), N. York, *Culicidae*, 9 spp. n. FELT & YOUNG (496), United States, *Culex*, 4 spp. n. GILLETTE (605), Colorado, *Pegomyia* n. sp. GROSSBECK (637), New Jersey, *Culex* sp. n. GROSSBECK (638), New Jersey, *Culex*, 2 spp. n. HERRICK, *Grabhamia jamaicensis*, Ent. News Philad. xv, p. 81. HINE (688), British

- Columbia, list with 2 spp. n.; OSBURN (1003), British Columbia, *Syrphidae* list. HINE (689), N. Carolina, *Chrysops*, 2 spp. n. HINE (690), Texas and Louisiana, *Ephydriidae*, 2 spp. n. HINE (691), *Tabanidae*, 7 n. spp. JOHNSON (765), U. S. and Canada, 4 spp. n. JOHNSON, supplementary list of the *Diptera* of New Jersey, Ent. News Philad. xv, pp. 157-163. MELANDER (936), *Stratiomyidae* list with *Macrosargus* sp. n. McCracken (931), California, *Anopheles* sp. n. SLINGERLAND & JOHNSON (1309), California, *Cecidomyia* n. sp. STEIN (1342), U. S. incl. Sitka, *Anthomyiidae* n. spp. WHITNEY (1525), *Tabanidae*, 4 spp. n.
- Aphaniptera*. BAKER (76), spp. n. ROTHSCHILD (1191), Brit. Columbia, Canada, 5 spp. n.
- Hemiptera*. ASHMEAD (54), Alaska, *Jassidae*, 3 spp. n., *Psyllidae*, 4 spp. n. BUENO (197), New York, *Heteroptera*, list. BUENO, Brit. Columbia, *Notonecta lutea*, Ent. News Philad. 1904, p. 220. BUENO, *Notonecta lutea*, Ent. News Philad. p. 220. BUENO, North American *Notonecta*, p. 62, J. N. York ent. Soc. xii. HEIDEMANN (670), *Aradidae*, 2 spp. n. HEIDEMANN (671), *Aradidae*, 3 spp. n. HEIDEMANN, North Carolina, *Schumannia*, P. ent. Soc. Washington vi, p. 12. OSBORN, Ohio Natural. iv, pp. 99-103; a further contribution to the Hemipterous fauna of Ohio. SCHOUTEDEN (1236), Colorado, n. g. *Scutellerides*. SCHWARZ (1263), *Psyllidae*, 7 spp. n. SWEZEY (1360), *Fulgoridae*, catalogue. UHLER (1416), Las Vegas, 8 spp. n. *Lygaeidae*, *Capsidae*, *Ceratocombidae*. VAN DUZEE (1430), *Pentatomidae*, Cat., 12 spp. n., n. g. WIRTNER (1535), Pennsylvania, Catalogue.
- Aphidae*. COCKERELL (288), New Mexico, *Cladobius* sp. n. PERGANDE (1023), *Phylloxera*, many spp. n. PERGANDE (1024), U. S., *Macrosiphum* n. sp.
- Aleyrodidae*. BEMIS (99), California, *Aleyrodidae*, 19 spp. n.
- Coccidae*. SANDERS (1207), Ohio, 3 spp. n. SANDERS (1208), Ohio, monograph.
- Neuroptera*. BANKS (87), *Neuropt.* except *Odonata*, n. spp. *Psocidae* and *Trichoptera*. BANKS (85), British Columbia, *Trichoptera*, 2 spp. n. BANKS (84), Washington, *Hydroptilidae*, 2 spp. n. BANKS (82), New Mexico, *Trichoptera*, 7 spp. n. CURRIE (334), Arizona and California, *Hemerobius*, 2 spp. n. CURRIE (335), Kootenay, *Hemerobiidae*, 5 spp. n. BANKS (82), New Mexico, *Hemerobius* sp. n., *Brachynemurus* sp. n. BANKS (81), *Hemerobius*, 5 spp. n. BANKS (82), New Mexico, *Psocus* sp. n. BANKS (82), N. Mexico, *Perlidae*, 2 spp. n.
- Odonata*. BRIMLEY & SHERMAN, N. Carolina, list, Ent. News Philad. xv, pp. 100-102. WILLIAMSON, West Pennsylvania, additions, Ent. News Philad. xv, pp. 277, 278.
- Thysanoptera*. DANIEL (350), California, 4 spp. n.
- Orthoptera*. BRITTON, New England, *Eritettix* and *Conocephalus*, Psyche xi, p. 23. BRUNER (195), Colorado. CAUDELL (251), Florida and Galveston, *Phasmidae*, 2 novelties. CAUDELL, British Columbia, list and notes, Ent. News Philad. xvi, pp. 62, 63. CAUDELL, Assiniboia, short list, Canad. Ent. xxxvi, p. 248. GILLETTE (606), Colorado, list. BRUNER (605), Colorado, n. spp. MEAD, Ohio Natural. iv, pp. 109-112; a list of the *Orthoptera* of Ohio. MORSE (962), Southeast. U. S., *Acridiidae*, 14 spp. n. REHN (1132), New Mexico etc., *Acridiidae*, 2 spp. n., *Locustidae* sp. n. REHN & HEBARD (1134), Georgia and Florida, *Ceuthophilus* sp. n. REHN (1135), Texas, *Kakerlac* sp. n. REHN (1138), S. Carolina, *Chorisoneura* n. sp. REHN (1137), New Jersey, *Melanoplus* sp. n. REHN (1139), *Stenopelmatinae*, 2 spp. n. REHN, notes on the *Orthoptera* of the Keweenaw Bay region of Baraga County, Michigan, Ent. News Philad. xv, pp. 229-237, 263-269. REHN, notes and records of New Jersey *Orthoptera*, Ent. News Philad. xv, pp. 325-332. SCUDDER & COCKERELL (1267), New Mexico, *Blattidae*, *Phasmid.*

Acrid., *Locust.*, *Gryll.*, spp. n. WALKER (1465), Ontario, *Gryllidae*,
2 spp. n. WALKER (1466), Ontario, *Locustidae*, annotated list.

10. CENTRAL AMERICA (MEXICO to PANAMA incl.).

Insecta. GODMAN (614).

Coleoptera. BATES (92), Costa Rica, *Plusiotis* n. sp. BERNHAUER
(108), *Eleusis*, *Xantholinus* sp. n. CASEY (248), Mexico, *Dinocleus* sp. n.,
Anthicid. n. sp. JACOBY (748), Mexico, Costa Rica, Panama, *Halticine*,
6 spp. n. JACOBY (748), Costa Rica, *Chlamys* n. sp. JACOBY (749),
Mexico, *Chlamys* n. sp. JORDAN (769), Mexico, Costa Rica, Nicaragua,
Anthribidae spp. n. LAMEERE (854), Mexico, *Callipogon* sp. n. OHAUS
(991), Costa Rica, *Anoplognathides*, 2 spp. n. PIC (1052), Mexico,
Cathorama sp. n. PIC (1064), Mexico, *Ptinidae*, 2 spp. n. PORTEVIN
(1100), Mexico, *Silphidae*, novelties. RAFFRAY (1114), *Pselaphidae*,
general work. SCHAEFFER (1220), Rio Grande and Lower California,
n. spp. STERNBERG (1344), Panama, *Aegopsis* sp. n. WATERHOUSE
(1491), Mexico, *Polycesta*, 2 spp. n. WEISE (1503), Costa Rica, *Cassi-*
didæ, 2 spp. n. WEISE (1504), Panama, Mexico, *Hispidae*, 2 spp. n.

Hymenoptera. BUYSSON (217), Mexico, *Parnopes* n. sp. CAMERON
(228), Panama, n. g. *Masaridae*, *Paratiphia* sp. n., *Polistomorpha* sp. n.
COCKERELL (280), Vera Cruz, *Tripeolus* sp. n. COCKERELL (281),
Mexico, *Xylocopa* sp. n. COCKERELL (282), Mexico, *Macrotera* n. sp.
COCKERELL (286), Mexico, *Trypetes carinatum*. FRIESE (550), Costa
Rica, *Centris* n. sp. FOREL (526), Costa Rica, *Azteca* n. sp. KIEFFER
(793), *Proctotrypidæ* n. sp. KIEFFER (794), Nicaragua, *Proctotrypidæ*,
4 spp. n. KONOW (838), Costa Rica, Mexico, *Labidarge*, *Ptilia*,
4 spp. n. SWENK (1357), Costa Rica, *Colletes*, 2 spp. n. SZÉPLIGETI
(1366), Mexico, *Trogus* n. sp. TITUS (1389), Costa Rica, *Heriades*
sp. n. VACHAL (1424), Mexico, *Halictus*, 26 spp. n. VACHAL (1426),
Halictus n. spp.

Lepidoptera. DOGNIN (398), Costa Rica, San Salvador, *Notodontidae*,
2 spp. n., *Eugiviria* sp. n., *Coptotelia* sp. n. DRUCE (406), Yucatan,
Adelocephala sp. n., Costa Rica, *Maschane* sp. n. DYAR (422), Mexico,
Apatelodes n. sp. DYAR (431), Mexico, *Afilia* n. sp. MABILLE (898),
Chiriqui, *Thracidæ* n. sp. SCHAUS (1225), *Syntomidæ*, *Notodontidae*,
Noctuidæ, *Chrysauguinae* spp. n. WARREN (1474), Mexico, Costa Rica,
Geometridæ n. spp. WARREN (1477), Mexico, Costa Rica.

Diptera. COQUILLETT (313), Nicaragua, Guatemala, Mexico, 17 spp. n.
COQUILLETT (315), Mexico, Nicaragua and Panama, 5 spp. n. COQUILLETT
(317), Mexico, *Conchyliastes* n. sp. HINE (691), Mexico, *Tabanus*,
2 spp. n. RICARDO (1172), British Honduras, *Dichelacera* n. sp.
SPEISER (1328), Honduras, *Ornithopertha* n. sp.

Hemiptera. BREDDIN (166), Guatemala, *Lycambes* n. sp. BREDDIN
(171), *Podisus* n. sp. DISTANT (393), *Cicadidae* n. g. SCHMIDT (1229),
Panama, *Ormenis* n. sp.

Termitidae. DESNEUX (372), Mexico, *Termes* sp. n.

Mallophaga. CARRIKER (247), Costa Rica, 35 spp. n.

Odonata. CALVERT (220), Costa Rica, *Thaumatoneura* sp. n.

Orthoptera. BURR (201), Mexico, *Sparatta*, Darien, *Carcinophora* sp. n.
REHN (1129), Mexico and Costa Rica, 4 spp. n. REHN (1130), Costa
Rica, Nicaragua, *Phasmidae* n. spp. REHN (1131), Mexico, *Phasmidae*,
Arsid., *Locust.*, *Gryll.* n. spp. REHN (1136), Nicaragua, *Stagmatoptera*
sp. n. SCUDDER & COCKERELL (1267), Mexico, *Æoloplus* sp. n.

11. ANTILLES, including BERMUDAS, BAHAMAS, BARBADOS.

Insecta. CLARK (278), GODMAN (614). West India *Col.* and *Hemiptera*, UHLER, SCHWARZ and others, pp. 42-46, P. ent. Soc. Washington vi.
Coleoptera. ARROW (39), Jamaica, St. Vincent etc., *Chærostus* 2 spp. n. BERNHAUER (108), St. Thomas, *Leptacinus* n. sp. BERNHAUER (109), St. Thomas, *Osorius* sp. n., Grenada, *Trogophlæus* sp. n. FAUVEL (485), St. Domingo, *Oxytelus* n. sp. LAMEERE (854), Porto Rico, *Callipogon* sp. n. RAFFRAY (1114), *Pselaphidæ*, general work. WATERHOUSE (1491), Jamaica, St. Domingo, *Polycesta*, 2 spp. n.
Lepidoptera. HAMPSON (653), Bahamas, *Phalænæ* spp. n., gen. n. LATHY (861), Dominica, list, 3 spp. n. SCHAUS (1225), Cuba, *Syntomidæ*, *Arctiidæ*, *Hipsidæ*, *Megalopygidæ*, *Notodontidæ*, Jamaica, *Hyphenæ* sp. n., Grenada, *Anisothrix* sp. n. WARREN (1474), Jamaica, *Geometridæ* n. spp. WARREN (1477).
Diptera. ADAMS (9), Grenada, *Siphonella* sp. n. GILES (604), Antigua, *Culicidæ*, 3 spp. n. JOHNSON, C. W., A revised list of the *Diptera* of Bermuda, 50 spp., Psyche xi, pp. 76-80. PAZOS, J.-H., Liste de moustiques de Cuba, Bull. Soc. ent. France 1904, p. 134.
Hemiptera. DISTANT (391), Grenada and St. Vincent, *Capsidæ*, 3 spp. n.
Orthoptera. BURR (201), Granada, *Diplatys*, Martinique, *Carcinophora* sp. n. REHN (1130), Swan island and Porto Rico, *Phasmidæ*, 2 spp. n.

12. SOUTH AMERICA, including TRINIDAD.

Insecta. BRÈTHES (175), Tucuman, *Cyclocephala*, 2 spp. n., *Iphiaulax* sp. n., *Asilidæ*, *Syrphidæ* and *Euxesta* n. spp., *Jassus* n. sp. GODMAN (614). Falkland Islands, see Insular, VALLENTIN.
Coleoptera. ARROW (38), Colombia, Patagonia, *Ægidium*, *Ochodæus*, 4 spp. n. AURIVILLIUS (58), Bolivia and Argentina, *Cerambycidæ*, 4 spp. n. BATES (92), *Pelidnotineæ*, revision, n. spp. BERNHAUER (108), *Staphylinidæ*, 12 spp. n. BERNHAUER (109), Brazil, *Trogophlæus*, 2 spp. n. BOILEAU (143), *Sphenognathus* 2 spp. n. BOURGEOIS (161), *Malacodermidæ*, 3 spp. n. FAIRMAIRE (476), *Cladotoma* sp. n., *Tenebrionidæ*, 7 spp. n., n. g. FAIRMAIRE (478), Brazil, *Cladotoma*, 2 spp. n., *Ancholenus* sp. n. FAUVEL (485), *Oxytelus* n. spp. FAUVEL (488), Brazil, *Staphylinidæ* gen. n. and spp. n. FAUVEL, Rev. Ent. franc. 1904, p. 140, *Luciola*, 2 spp. HAGEDORN (651) *Coccotrypes* sp. n. HELLER (675), Brazil, *Zygopidæ*, 4 spp. n. JACOBY (742), Bolivia and Argentina, *Chrysomelidæ*, 9 spp. n. JACOBY (746), *Halticidæ*, 27 spp. n. JACOBY (747), *Mastotethus*, 10 spp. n. JACOBY (748), *Chlamys*, 7 spp. n. JACOBY (749), Venezuela, *Chlamys* n. sp. JORDAN (769), *Anthrribidæ*, many spp. n. and gen. n. LAMEERE (854), Peru, *Callipogon* sp. n. LEWIS (880), *Histeridæ*, 6 spp. n., gen. n. OHAUS (991), *Anoplognathidæ*, 23 spp. n. PIC (1052), *Cathorama*, 9 spp. n. PIC (1053), Guiana, *Anthicus* n. sp. PIC (1054), Peru, *Notoxus* n. sp. PIC (1057), Buenos Ayres, *Anthicus* n. sp. PIC (1064), Peru, Chili etc., *Ptinidæ*, 8 spp. n. PIC (1066), Brazil, *Malacoderm.* 2 spp. n. PIC (1067), Brazil, *Eupactus*, 6 spp. n. PIC (1070), Brazil, *Anthicus*, 6 spp. n. PORTEVIN (1100), Guiana, *Disochætus* sp. n. RAFFRAY (1114), *Pselaphidæ*, general work. RÉGIMBART (1124), Venezuela and Guiana, *Dytiscidæ*, 2 spp. n., *Gyrinidæ* sp. n. SCHWARZ (1265), *Elateridæ*, 40 spp. n. STERNBERG (1344), *Ægopsis* 4 spp. n. THÉRY (1377), Peru, *Buprest.* sp. n. WATERHOUSE (1491), Brazil, *Acherusia*, 2 spp. n. WEISE (1503), *Cassididæ*, 3 spp. n. ADAMS (10), *Chlorops*, 5 spp. n. WEISE (1504), *Hispidæ*, many spp. n. WEISE (1507), *Cassididæ*, *Hispidæ*, 14 spp. n., gen. n.
Hymenoptera. ANDRÉ (29), Chile, *Mutillidæ*, *Thynnidæ*, 5 spp. n. ASHMEAD (41), *Chalcididæ* of S. America, Catalogue, many gen. n. and

- spp. n. BRÈTHES (176), Brazil, 1 sp. n., Argentina list. BRÈTHES (177), Argentina, *Meteorus* n. sp. BRÈTHES (178), La Plata, monograph of *Eumenidae*, many spp. n. BRÈTHES (179), Patagonia, *Anthidium* sp. n. BRÈTHES (180), Argentina, *Trimeris* sp. n. BRÈTHES (181), Buenos Aires, *Oxybelus* n. sp. DU BUYSSON (217), *Chrysid.*, 5 spp. n. DU BUYSSON (219), *Parachartergus* sp. n., *Sapyga* sp. n. CRAWFORD (326), Bolivia, *Diphaglossa* sp. n. DUCKE (411), social *Vespidæ* n. spp. DUCKE (412), Parà, *Chrysid.*, with *Chrysogona* sp. n. DUCKE (413), Brazil, *Sphegides*, 5 spp. n. DUCKE (414), Lower Amazons, *Eumenidae*, 6 spp. n. DUCKE (415), Amazons, *Centris*, 2 spp. n. FOREL (526), Peru and Amazons, *Formicidae*, 14 n. spp., Chile, 2 spp. n. FOREL (528), Patagonia, Chile, 3 spp. n. FOREL (530), *Formicidae*, 4 spp. n. FOREL (532), Brazil, *Formicidae*, 5 spp. n. FOREL (532), Chile; *Tapinoma* n. sp. FRIESE (542), S. Am. incl. of Chile, *Caupolicana* and *Ptiloglossa* n. spp. FRIESE (543), Brazil and Ecuador, *Ancyloscelis*, 3 spp. n. FRIESE (545), Chile, Peru, Ecuador, *Apidae*, 10 spp. n. FRIESE (547), Chile, *Anthidium* sp. n. FRIESE (550), Brazil and Chili, *Centris*, 2 spp. n. HOLMBERG (697), *Apidae*, *Fossoria*, many spp. n., genn. n., *Tenthredinidæ* list. KIEFFER (793), *Proctotrypidæ* and *Evaniidæ* spp. n. KIEFFER (794), incl. Patagonia, *Proctotrypidæ*, 8 spp. n. KIEFFER (796), Chile, *Pseudochalcera* n. sp. KIEFFER (797), Chile, *Cymipidæ* n. g. KIEFFER (798), Chile, *Proctotrypides*, 3 spp. n. KONOW (838), 7 spp. n., *Labidarge* and *Waldheimia*. PORTER (1099), Chile, *Vespidæ* list. SCHROTTKY (1245), Paraguay, Census, 1 n. sp., *Apidae*. SCHULTHESS-RECHBERG (1246), *Nortonia*, 4 spp. n. SCHULTZ (1253), Amazons, *Aculeata*, 3 spp. n. SZÉPLIGETI (1365), *Braconida*, many spp. n. SZÉPLIGETI (1366), Peru, *Iphiaulax* n. sp. SZÉPLIGETI (1367), *Braconidae* n. sp. VACHAL (1424), S. Am., incl. Chili, *Halictus*, 5 spp. n. VACHAL (1425), Tucuman, *Apidae*, 62 spp., 39 spp. n. VACHAL (1426), *Halictus* n. spp. VACHAL (1427), Ecuador, *Halictus*, 3 spp. n., *Sphecodes* sp. n.
- Lepidoptera*. DANNANT (351), Venezuela, *Chlorippe*, Guiana, *Monethe* n. sp. DOGNIN (398), Northern S. Am., *Ischnocampa* sp. n., *Notodontidæ*, 6 spp. n., *Geometridæ*, 8 spp. n., *Eugiviria*, sp. n., *Pyralidæ*, 22 spp. n., *Tortricidæ*, 4 spp. n., *Cryptolechia* sp. n. DOGNIN (399), *Geometridæ* and *Lithosiidæ*, 23 spp. n. DOGNIN (400, 401), Peru, *Anaxita* sp. n. DRUCE (405), *Erycinidæ*, 23 spp. n. DRUCE (406), Tropical S. Amer., *Syntomidæ*, *Arctiidæ*, *Ceratocampidæ*, *Saturniidæ*, *Lasiocampidæ*, *Bombycidæ*, *Notodontidæ* spp. n. EHRMAN (447), Venezuela, *Papilio* sp. n. GUPPY, P. Inst. Trinidad, pt. 3, p. 167, Trinidad, *Metamorpho dido*, etc. JOANNIS (763), Organ mountains, *Lycomorphodes* and *Eriopyga* sp. n. KAYE (775), Trinidad, *Rhopalocera* catalogue, 289 spp., 10 spp. n. LATHY (859), *Erycinidæ*, 10 spp. n. MABILLE (898), *Hesperiidæ*, 9 spp. n. OBERTHÜR (989), Bolivia, *Sphingide* sp. n. RÖBER (1179), Peru, *Mechanitis* n. sp., *Lymanas* n. sp. RÖBER (1180), Colombia and Ecuador, *Caligo*, 3 spp. n. ROTHSCILD (1195), Peru, *Sphingidæ*, 3 spp. n. ROTHSCILD, W. (1198), Tucuman, *Rothschildia* n. sp. SANDERS (1206), Brazil, Burchells 1825-1830, *Rhopalocera*. SCHAUS (1225), *Syntomidæ*, *Arctiidæ*, *Megalopygidæ*, *Liparidæ*, *Lasiocampidæ*, *Saturniidæ*, *Ceratocampidæ*, *Perophoridae*, *Cossidæ*, *Notodontidæ*, *Noctuidæ*, *Chrysangiuæ*. STICHEL (1348), *Narope*, 2 spp. n., *Caligo* n. sp. THIEME (1379), Andes, *Rhopalocera*, 4 spp. n. THIEME (1380), Ecuador, Bolivia, *Lymanopoda*, 2 spp. n. THIERRY-MIEG (1385), Peru, *Callipia*, *Stannodes*, *Synneuria* and *Marmopteryx* sp. n., and *Geometridæ* spp. n. WARREN (1474), *Thyrididæ*, 2 n. spp., *Epiplema*, 18 n. spp., *Geometridæ*, about 300 n. spp., n. genn. WARREN (1477), *Siculodes*, 2 spp. n., *Epiplema* spp. n., *Geometridæ*, many spp. n.
- Diptera*. BISCHOF (130), *Tuchinidæ*, 13 spp. n. COQUILLET (319);

- Brazil, *Ceratopogon* sp. n. REED (1123), Chile, *Ornithomyia* n. sp. SPEISER (1328), Rio Grande do Sul, *Stilbometopa* n. sp. STEIN (1342), *Anthomyiidae*, numerous n. spp.
- Aphaniptera*. BAKER (76), Brazil, *Pulex*, 2 spp. n. ROTHCHILD, N. C. (1191), n. spp. ROTHCHILD (1193), Paraguay, *Ceratopsylla* n. sp.
- Hemiptera*. BERGROTH (105), Brazil, *Scutellerides*, 2 spp. n. BREDDIN (165); *Edessa*, 13 spp. n. BREDDIN (170), Bolivia, *Colobasiastes* sp. n. BREDDIN (171), *Heteroptera*, many spp. n., n. g. BREDDIN (172), Ecuador, *Tomaspis*, 8 spp. n. DISTANT (387), Northern S. Amer. *Horcias*, 3 spp. n. DISTANT (393), Bolivia, *Cicada* sp. n. HORVÁTH (714), *Colobathristinae* n. spp. JACOBI (734), *Paciloptera*, 2 spp. n. JACOBI (736), Brazil, *Cicadidae* and *Fulgoridae*, 6 spp. n. KIRKALDY (813), *Notonectidae*, 2 spp. n. OSBORN (1001), Bolivia and Guiana, 5 spp. n. SCHMIDT (1229), *Flatides*, 8 spp. n. SCHOUTEDEN (1236), *Scutellerides*, 3 spp. n.
- Aphidae*. SCHOUTEDEN (1240), *Aphidae* of S. Amer., 1 sp. n.
- Trichoptera*. ULMER (1422), Patagonia and Chile, n. spp.
- Perlidae*. KLAPÁLEK (818), Patagonia, Peru, *Gripopteryx*, 2 spp. n.
- Termitidae*. DESNEUX (369), Surinam, *Rhinotermes* sp. n. DESNEUX (372), *Calotermes* sp. n., *Termes* sp. n.
- Ephemeridae*. ULMER (1422), Patagonia, notes.
- Odonata*. NEEDHAM (978), Brazil, *Micrathyria*, sp. n. RIS (1176), Patagonia and Chili list, distribution; Buenos Aires, 2 spp. n.
- Orthoptera*. BORELLI (153, 154), Ecuador, Argentina, Paraguay, *Forfic.* 3 spp. n. BURR (201), Guiana *Forcipula*, Ecuador *Labia*, Darien *Spongiphora* sp. n. CAUDELL (255), Paraguay, *Forficul.* and *Phasmid.* spp. n. KIRBY (804), Pará, *Photina* sp. n. KIRBY (805), S. Amer. incl. Trinidad, *Phasmidae*, 6 spp. n., gen. n. LYNCH ARRIBÁLZAGA (897), Peru, *Schistocerca* sp. n. MJÖBERG (950), *Anisolabis* n. sp. from Matto Grosso, in Sweden. REHN (1129), Bolivia, *Paracanthops celebs*. REHN (1133), Brazil, Brit. Guiana, Chile, *Acridiidae*, 5 spp. n.

PALÆO-ENTOMOLOGY.

Palæozoic insects of Belgium, HANDLIRSCH, Mem. Mus. Belgique iii, 20 pp., vii pls.

Palæozoic Insects and their relations to plants, HANDLIRSCH (659).
Palæoblattina douvillei, is part of a Trilobite, AGNUS, Rev. Sci. Bourbonnais xvii, p. 85.

Diptera.

- Culicidae*. *Corethra ciliata*, Baltic amber, MEUNIER, p. 89, Bull. Soc. ent. France 1904, n. sp.
- MEUNIER, monographs the *Cecidomyiidae*, *Mycetophilidae* and *Chironomidae* found in amber, describing the following n. genn. and n. spp.
- Bryocrypta*, *Cecidomyiidae* (? n. g.), *girafa*, p. 25, *capitosa*, p. 26, *vetusta*, *elegantula*, p. 27, *fugioidea*, n. spp., p. 28, Ann. Soc. Bruxelles, xxviii.
- Palæocolpodia* (? n. g.), *eocenica* n. sp., p. 29.
- Colpodia xylophaga*, p. 30, *curvinervis*, p. 31, *brevicornis*, p. 32, n. spp.
- Dicroneurus magnificus*, p. 32, *elegantulus*, p. 33, n. spp.
- Epidosis gibbosa*, p. 33, *minuta*, p. 34, *noduliformis*, *titania*, p. 35, n. spp.
- Campatomyia sinuosa*, p. 36, n. sp.
- Winnertzia radiata*, p. 36, *cylindrica*, p. 37, *affinis separata*, p. 38, n. spp.
- Monardia submonilifera*, p. 39, n. sp.
- Campylomyza crassitarsis*, p. 40, n. sp.
- Lestremia pinites*, p. 42, n. sp.
- Frirenica eocenica*, p. 43, n. sp.
- Heteropeza pulchella*, p. 43, n. sp.

- Ledomyiella* n. g. ? , p. 44, *L. succini*, *rotundata*, p. 45, *eocenica*, *pygmæa*, p. 46, *crassipes*, p. 47, n. spp.
Sciariidæ. *Palæoheterotricha* n. g. *P. grandis* n. sp., p. 62, *Sciara splendida*, p. 64, *errans*, *villosa*, p. 65, *botuli*, p. 66, *sendelina*, p. 67, *dificilis*, p. 68, *verticillata*, *variabilis*, p. 69, *eocenica*, *diabolica*, p. 71, *orientalis*, p. 72, *rara*, *bella*, p. 73, *ignorata*, *preciosa*, p. 74, *klebsii*, p. 75, *prolifera*, p. 76, *rubscamenia*, *tertiaria*, p. 77, *robusta*, *morosa*, p. 78, *palmnickii*, *minuscula*, p. 79, *villosoides*, p. 80, *defectuosa*, p. 89, n. spp.
Bradysia curiosa, p. 80, *electra*, *mosoïdes*, p. 81, *infernalis*, *agilis*, p. 82, *umbrosa*, p. 83, n. spp.
Corynoptera dubia, p. 84, n. sp.
Willistoniella n. g. *W. magnifica*, p. 85, n. sp.
Heeriella n. g. *bifurcata*, n. sp., p. 86.
Cerato n. g. *C. longipalpis* n. sp., p. 86.
Palæognoriste n. g., p. 87, *P. sciariforme*, p. 88, n. sp.
Sciarella n. g. *S. mycetophiliformis* n. sp., p. 89.

- Helomyza major*, p. 22, *media*, *minuta*, p. 24, Baltic amber, MEUNIER, Feuille Natural. xxxv, n. spp.
Leria alacris, *sapromyzoïdes*, Baltic amber, MEUNIER, p. 25, Feuille Natural. xxxv, n. spp.
Heteromyza dubia, Baltic amber, MEUNIER, p. 25, Feuille Natural. xxxv, n. sp.
Palæoheteromyza n. g.
P. crassicornis n. sp., Baltic amber, MEUNIER, p. 26, Feuille Natural. xxxv.
HANDLIRSCH describes the following from the Permian, Russia.
Palæohemiptera, n. group, for 2 genn. viz., *Presbole* n. g. *hirsuta* n. sp., HANDLIRSCH, p. 2, Mem. Ac. St. Petersb. (viii) xvi, No. 5.
Scytinoptera n. g. *kokeni* n. sp., p. 3, t. c.
Palæomantis n. g. *schmidtii* n. sp., HANDLIRSCH, p. 4, t. c.
Petromantis rossica n. sp., p. 5, HANDLIRSCH, t. c.
Limmatoblatta n. g. *permensis* n. sp., HANDLIRSCH, p. 6, t. c.
Aissoblattia n. g. *orenbургensis*, *rossica* n. spp., HANDLIRSCH, p. 6, t. c.
Phikartus n. g. *Ephemeridform*, *rossicus*, *netschajewi* n. spp., HANDLIRSCH, p. 6, t. c.
Dyadentomum n. g. *Ephemeridæ*, *permense* n. sp., HANDLIRSCH, p. 7, t. c.
Thnetus n. g. *Ephemeridæ*, *stuckenbergi* n. sp., HANDLIRSCH, p. 7, t. c.
Dyadozoarium n. g. *pachypus* n. sp., HANDLIRSCH, p. 7, t. c.

List of Palæozoic and secondary *Homoptera*, with *Acocephalites* n. g. *breddini* n. sp., Kimeridge of Catalonia, MEUNIER, pp. 119–121, Feuille Natural. xxxiv.

Neuropteroid Insect from Solenhofen (Jura), WALTHER, p. 14, Monatsber. deutsch. Geol. Ges., in Zeitschr. Deutsch. geol. Ges. lv.

Palæodictyoptera.

- Progonopteryx* n. g. *belgica* n. sp., Upper Westphalian Belgium, p. 5, pl. i, figg. 1–3, HANDLIRSCH, Mem. Mus. Belgique iii.
Anthracentomon n. g. *latipenne* n. sp., Upper Westphalian, Belgium, p. 6, pl. i, figg. 4–6, HANDLIRSCH, t. c.
Mecynoptera n. g. *splendida* n. sp., Upper Westphalian, Belgium, p. 7, pl. ii, figg. 7, 8, HANDLIRSCH, t. c.
Breyeria borinensis, figure, description, referred to new family *Breyeriidæ*, pp. 7–10, pl. iii, figg. 9, 10, HANDLIRSCH, t. c.

Megasecoptera.

- Palæopalara* n. g. *gracilis* n. sp., Upper Westphalian, Belgium, pp. 10, 11, pl. ii, figg. 12, 13, HANDLIRSCH, t. c.

Anthracopalura n. g. *falcipennis* n. sp., Upper Westphalian, Belgium, p. 11, pl. iv, figg. 14-16, HANDLIRSCH, t. c.

Blattoidea.

Archimylaecria, belgica, pl. iv, figg. 17, 18, *carbonis*, pl. v, figg. 19, 20; Upper Westphalian, Belgium, HANDLIRSCH, t. c.

Protorthoptera.

Omaliu macroptera, pl. v, fig. 21, p. 13, referred to new family *Omaliidae*, HANDLIRSCH, t. c.

Pachytylopsis persenairei, pl. vi, figg. 22, 23, p. 14, referred to new family *Pachytylopsides*, HANDLIRSCH, t. c.

Palorthopteron n. g. *melas* n. sp., Upper Westphalian, Belgium, pl. v, fig. 24, p. 15, HANDLIRSCH, t. c.

Symbalophlebia n. g. *latipennis* n. sp., Upper Westphalian, Belgium, p. 15, pl. vi, figg. 25, 26, HANDLIRSCH, t. c.

Palaeomastax n. g. *carbonis* n. sp., Upper Westphalian, Belgium, pl. vii, figg. 27, 28, p. 16, HANDLIRSCH, t. c.

Anthrocomastax n. g. *furcifer* n. sp., Upper Westphalian, Belgium, pl. vii, figg. 29, 30, p. 17, HANDLIRSCH, t. c.

Distasis n. g. *rhippiphora* n. sp., Upper Westphalian, Belgium, pl. vii, figg. 31, 32, p. 17, HANDLIRSCH, t. c.

The following is named in Amer. J. Sci. xv.

Megablattina beecheri n. g., n. sp., SELLARDS, p. 312, pl. viii; and in op. cit. xviii, is renamed *Archoblattina* n. n. *beecheri*, and figured and described, pp. 218-221.

SELLARDS in Amer. J. Sci. xv, and xviii, discusses Palaeozoic *Blattidae* and describes the following new forms from the coal-measures.

Mylacris anceps, p. 129.

Etblattina juvenis, p. 131, *coriacea*, p. 213.

Gerablattina arcuata, p. 216.

Schizoblattina n. g. *S. multinervia* n. sp., p. 217.

Etblattina gaudryi, Carboniferous of Commentry, AGNUS, p. 29, Naturaliste 1904, n. sp.

Etblattina steinmannii, Upper Carbon. Baden, STERZEL, p. lxxi, pl. i, Ber. Ges. Chemnitz xv.

III. SYSTEMATIC.

N.B.—The reference numbers collected under the headings of the various groups refer to "Titles" on pp. 5-89, and are intended to give, in each case, a complete list of all memoirs containing anything of importance in connection with the group.

Classification of Insects, with list of his 34 Orders, HANDLIRSCH (657).

The classification of *Hexapoda*, BÖRNER (157).

Remarks on Börner's classification and names, ENDERLEIN, pp. 145, 146, Zool. Anz. xxviii.

Classification by gonapophyses, *Homoithoraka* and *Heterothoraka*, Klapálek (815).—Klapálek, Zool. Anz. xxviii, pp. 255-259, further upholds his system and criticises HANDLIRSCH.

Classification of Insecta, abstract of recent works, HEYMONS (684).

The names of the Orders of Insects, SHIPLEY (1291).—SHIPLEY's list of Orders and names reproduced, Entomologist 1904, pp. 138, 139, and Psyche xi, p. 28.

New Palæozoic Insects from Upper Westphalian of Belgium, see Palæo-entomology, p. 124.

Iridescent and metallic coloration discussed, *Morpho*, *Entimus* etc., BIEDERMANN (129).

What is a species? P. ent. Soc. London 1904, pp. xiii-xvii.

The value of a diagnosis, K. DANIEL, Munchen. Kol. Zeitschr. ii, pp. 71 etc.

Prehistoric entomology, BERTHOUMIEU (114).

Development of wings, POWELL (1104).

(A.) COLEOPTERA.

Sketch of systems of classification of *Coleoptera*, JACOBSON, pp. 268-276
Rev. Russe Ent. 1904.

Number of facettes in the eye, many forms, LEINEMANN (872).

Alaska *Coleoptera*, reprint, SCHWARZ (1264), KINCAID (800).

XAMBEU completes the series of his observations on habits and metamorphosis (1539).

CICINDELIDÆ.

[Memoirs relating to *Cicindelidæ*: FAIRMAIRE (477), HORN (708-713), LESNE (877), MAINDRON (899), PÉRINGUEY (1028, 1029), SLOANE (1310), WICKHAM (1526).]

The *Cicindelidæ* of Ceylon, HORN, Spolia Zeylan. ii, pp. 30-44, 1 pl.

Ancient geography and present distribution of some N. American *Cicindela*, WICKHAM (1526).

Amblychila: there are 3 species, the synonymy and characters, HORN, pp. 97-99, Deutsche ent. Zeitschr. 1904.

Cicindela, synonymical notes, pp. 86-90, *C. nivicincta inspecularis* subsp. n., p. 87, HORN, Deutsche ent. Zeitschr. 1904; *C. germanica* varr. n., BEUTHIN, p. 114, Soc. ent. xix; *C. aphrodisia* var. n. *luctuosa*, RAGUSA, p. 85, Natural. Sicil. xvii; *C. schrenki benjamini*, and *ordinaria*, subsp. n., p. 295, *C. 10-pustulata leucomelana*, p. 296, and *sapphinea*, p. 297, subsp. n., SEMENOW, Rev. Russe Ent. 1904; *C. corticata laticolor* var. n., p. 36, *ceylonensis diversa* var. n., p. 37, pl. f. 19, HORN, Spolia Zeylan. ii; *C. jungi*, note and fig., RAINBOW, p. 245, Rec. Austral. Mus. v.

C. proserpina, p. 424, *oscari*, p. 425, E. Africa, HORN, Deutsche ent. Zeitschr. 1904; *C. arnoldi*, Cameroons, HORN, p. 431, t. c.; *C. willeyi*, Ceylon, HORN, p. 36, Spolia Zeylan. ii; *C. innocentior*, N. Guinea, HORN, p. 427, Deutsche ent. Zeitschr. 1904; *C. frenchi*, Roebuck Bay, p. 527, *aurita*, Mackay, p. 528, SLOANE, P. Linn. Soc. N. S. Wales xxix: n. spp.

Collyris gigas and others, synonymy and notes, *C. bicolor* Horn = (*tonkinensis* Fl.), HORN, pp. 82-84, Deutsche ent. Zeitschr. 1904; *C. saundersi letior* subsp. n., HORN, p. 35, Spolia Zeylan. ii.

Ctenostoma batesi subsp. n. *rugicollis*, HORN, p. 82, Deutsche ent. Zeitschr. 1904.

Distypsidera orbicollis, Cairns, SLOANE, p. 529, P. Linn. Soc. N. S. Wales xxix, n. sp.

Dromica and *Myrmecoptera*, synonymy, pp. 90-93, *M. polyhirmoides* subsp. n. *irregularis*, HORN, pp. 90-92, Deutsche ent. Zeitschr. 1904.

D. (Cosmema) concinna, specialis, Transvaal, PÉRINGUEY, p. 448, Nov. Zool. xi, n. spp.

Euryoda tenuicollis, virgulata, p. 128, *latecyanea*, p. 129, Madagascar, FAIRMAIRE, Bull. Soc. ent. France 1904; *E. breviformis*, Madagascar, HORN, p. 85, Deutsche ent. Zeitschr. 1904: n. spp.

- Hiresia*, varietal note, HORN, p. 84, Deutsche ent. Zeitschr. 1904.
Megacephala, synonymy, pp. 94-97, *M. (S.) asperatum* subsp. n. *gratiosa*, p. 95, HORN, Deutsche ent. Zeitschr. 1904.
M. oscari, E. Africa, HORN, p. 423, Deutsche ent. Zeitschr. 1904; *M. schultzeorum*, Cameroons, HORN, p. 430, t. c.; *M. ertli*, E. Africa, HORN, p. 432, t. c.: n. spp.
Odontochila ignita=(*cinctula* Bates), *O. salvini* Bates and *secedens* Steinh. are one, HORN, p. 86, t. c.
Ophryodera rufomarginata var. n. *circumcinctoides*, HORN, p. 431, t. c.
Pogonostoma subtilis, Diego-Suarez, n. sp., HORN, p. 81, t. c.
Tetracha (Styphloderma) dodsi, Rhodesia, PÉRINGUEY, p. 167, Ann. S. African Mus. iii, n. sp.
Tricondyla horni, S. India, MAINDRON, pp. 263-285, Bull. Soc. ent. France 1904; *T. (Derocrania) fusiformis*, Ceylon, HORN, p. 35, pl. f. 1, Spolia Zeylan. ii: n. spp.

CARABIDÆ.

- [Cf. ABEILLE (2), BREIT (174), BROUN (184), CHOBOUT (268), CSIKI (331, 332), DANIEL (344), DANIEL & DANIEL (349), DEVILLE (374), DESBROCHERS (366), DIMMOCK & KNAB (381), FAIRMAIRE (473, 477), FLEISCHER (514), GANGLBAUER (581, 582), HOLDHAUS (695), KOLBE (829), LESNE (877), MAINDRON (899), PÉRINGUEY (1028), PEYERIMHOFF (1042), PIC (1077), PUEL (1100), REITTER (1152, 1154) SCHAEFFER (1220), SCHATZMAYR (1223), SEMENOW (1272, 1275, 1279, 1280), SLOANE (1310, 1311), TSCHITSCHÉRINE (1401, 1402, 1403), UHAGON (1415), WEBER (1497).]
- The larvæ of *Carabidæ*, with detailed study of *Dicælus* and *Brachinus*, DIMMOCK & KNAB, Bull. Springfield Mus. i, pp. 1-55, pls. i-iv.
- Abacetus perturbator*=(*capicola* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
- A. auspicatus*, p. 189, *vexator*, p. 190, *diversus*, p. 191, *lautus*, *dilucidus*, p. 192, *minus*, *jucundulus*, p. 193, *servitulus*, *malvernensis*, p. 194, *optimus*, p. 195, *clarus*, *vertagus*, p. 196, *discrepans*, p. 197, *evulsus*, *shilouvanus*, p. 198, *inopinus*, *effulgens*, p. 199, *jubatus*, *pilosulus*, p. 200, S. Africa, PÉRINGUEY, t. c.: n. spp.
- Acinopus megacephalus*=(*emarginatus* Chaud.), *A. gutturosus*=(*megacephalus* Reitt.), BEDEL, p. 139, Bull. Soc. ent. France 1904.
- Acupalpus (Balius) drurei*, Bagdad, PIC, p. 89, Echange xx, n. sp.
- Amara nitida* var.=(*guntheri* Sahlb.), BEDEL, p. 235, Abeille xxx.
- A. (Leiomorpha) uhligi*, Mte. Cavallo, HOLDHAUS, p. 226, Munchen. Kol. Zeitschr. ii, n. sp.
- Anisodactylus nemorivagus atricornis*=(*atripes* Ganglb.), BEDEL, p. 235, Abeille xxx.
- A. crouzeti*, S. France, PUEL, p. 160, Bull. Soc. ent. France 1904, n. sp.
- Anophthalmus bugezi*, larva, XAMBEU, p. 106, Bull. Soc. ent. France 1904.
- A. setnik*, Bosnia, REITTER, p. 151, Wien. ent. Zeit. xxiii; *A. sziladyi*, Hungary, CSIKI, p. 170, Rov. Lapok 1904: n. spp.
- Aristodacnus* n. n. for *Macrotelus* Chaud., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
- Bembidium scudder*, abnormal ind., HAYWARD, p. 14, Psyché xi.
- Bipartiti*, this named revived for *Scaritini*: taxonomy, phylogeny, chaetotaxy, of *Pasimachides* etc., SLOANE, pp. 704-709, P. Linn. Soc. N. S. Wales 1904.
- Bothriopterus angustatus*, habitat, BRUYANT & DUFOUR, Feuille Natural. xxxiv, p. 219.

- Brachinus mactus*, p. 171, Rhodesia, *umrotianus*, Natal, p. 172, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Brachynillus* n. g. near *Brachyus*, *B. varendorffi* n. sp., cavern E. Africa, REITTER, p. 178, Wien. ent. Zeit. xxiii.
- Brosicus declivis*, characters, SEMENOW, p. 301, Rev. Russe Ent. iv.
- Callida nigripes, fervida*, Natal, PÉRINGUEY, p. 174, Ann. S. African Mus. iii, n. spp.
- Callistomimus placens*, Rhodesia, PÉRINGUEY, p. 186, t. c. n. sp.
- Calosoma*, Australian species, SLOANE, p. 700, P. Linn. Soc. N. S. Wales 1904.
- C. dietzii*, California, SCHAEFFER, p. 197, J. N. York Ent. Soc. xii, n. sp.
- Carabus*, LAPOUGE continues his phylogeny, the *latus* allies, Bull. Soc. sci. med. Ouest France xiii, pp. 366-380 : Varr. tabulated, LAPOUGE, pp. 15 etc., Echange 1904 : Notes on Roumanian forms, BORN, pp. 117-120, & HORMUZAKI, pp. 120, 121, Bull. Soc. Bucarest xiii : Various notes in Russian, SEMENOW, pp. 111-113, Rev. Russe Ent. iv ; *C. auratus* var. n. *ventruzenensis*, NICOLAS, p. 84, Echange xx ; *C. auratus* var. n. *labitiei*, CLÉMENT, p. 245, Bull. Soc. ent. France 1904 ; *C. morbillosus* var. n. *viridulus*, RAGUSA, p. 49, Natural. Sicil. xvii ; *C. alpestris adamellicola* var. n., GANGLBAUER, p. 186, Munchen. Kol. Zeitschr. ii ; *C. ulrichi* var. n. *pernix*, CSIKI, p. 147, Rov. Lapok 1904 ; *C. scheidleri* var. n. *koshanini*, CSIKI, p. 591, Ann. Mus. Hungar. ii : Larvæ of *C. ulrichi, catenulatus* etc. cuts, WEBER, pp. 414-418, Allg. Zeitschr. Ent. ix.
- Carpaulum* n. g. *Physocrotaphini*, p. 536, *C. inflaticeps*, p. 537, *porosum*, p. 538, n. spp., Queensland, SLOANE, P. Linn. Soc. N. S. Wales xxix.
- Chatoleistus* subg. n. of *Leistus* for *L. relictus* Sem., SEMENOW, p. 119, Rev. Russe Ent. iv.
- Chlenius ditulus*, p. 184, *pronus*, p. 185, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Clivina*, notes on Australian, with synonymy (not here given), SLOANE, pp. 712-733, P. Linn. Soc. N. S. Wales 1904.
- C. doddi*, p. 715, *cribrifrons*, p. 716, *atriderosis*, p. 718, *nigra*, p. 722, *dingo*, *pectonoda*, p. 724, *misella*, p. 727, *pallidiceps*, p. 728, *cylindripennis*, p. 729, *robusta*, p. 731, *obliquicollis*, p. 732, *ovalipennis*, p. 733, Australia, SLOANE, t. c., n. spp.
- Colpodes validus*, Madagascar, FAIRMAIRE, p. 129, Bull. Soc. ent. France 1904, n. sp.
- Coptoptera indotata*, Rhodesia, PÉRINGUEY, p. 175, Ann. S. African Mus. iii, n. sp.
- Coryza*, *Clivina carinifrons* referred to this, SEMENOV, p. 202, Rev. Russe Ent. iv.
- Craspedophorus laticollis, merus*, Rhodesia, PÉRINGUEY, p. 187, Ann. S. African Mus. iii, n. spp.
- Crepidopterus favrei*, S. India, MAINDRON, p. 264, Bull. Soc. ent. France 1904, n. sp.
- Discopterella* subg. n. for *Discoptera przevalskii* Sem., SEMENOV, p. 202, Rev. Russe Ent. iv.
- Disphæricus rhodesianus*, S. Africa, PÉRINGUEY, p. 188, Tr. S. African Mus. iii, n. sp.
- Dromius quadraticollis*=(*cordicollis* Vorbr.), p. 300, *D. uralensis* and *longicollis*, note, p. 302, SEMENOW, Rev. Russe Ent. 1904, cf. also p. 314, t. c. ; *D. ruficollis* var.=(*triangularis* Sem.), SEMENOW, p. 202, Rev. Russe Ent. iv ; *D. longulus*, characters, SEMENOV, p. 167, Rev. Russe Ent. iv ; *D. cordicollis*, characters, distribution, VORBRINGER, p. 45, Deutsche ent. Zeitschr. 1904.
- D. cribricollis*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlviii, n. sp.

- Dyschirius unicolor beludsha* subsp. n., TSCHITSCHÉRINE, p. 267, Rev. Russe Ent. 1904; *D. obscurus* var. n. *dilatocollis*, p. 32, *impunctipennis* var. n. *laevipunctatus*, p. 33, *bonelli* var. n. *grossepunctatus*, p. 34, *punctatus* var. n. *basalis*, p. 36, FLEISCHER, Vestnik. Klub. Prostějov ii.
- D. scriptifrons*, *hauseri*, Turkestan, *pseudextensus*, Andalusia, p. 42, *irkutensis*, Siberia, p. 45, *heydeni*, Alžir, p. 51, FLEISCHER, t. c.; *D. fleischeri*, S. France and Algeria, DEVILLE, p. 29, Bull. Soc. ent. France 1904; n. spp.
- Elaphrus jakovlevi*, *angustus* = (*longicollis* Sahlb.), *angusticollis*, notes, SEMENOV, pp. 102–105, 119, 120, Rev. Russe Ent. iv; *E. latipennis*, characters, SEMENOV, p. 124, Horæ Soc. ent. Ross. xxxvii; *E. longicollis* = (*jakovlevi* Sem.), POPPIUS, p. 364, Annuaire Mus. St. Petersb. viii.
- E. trossulus*, Mongolia, p. 21, *tibetanus*, E. Tibet, p. 22, SEMENOV, Rev. Russe Ent. iv, n. spp.
- Eristomus* = (*Eriocypas* Tsch.), SEMENOV, p. 201, Rev. Russe Ent. iv.
- Forcipator* n. n. for *Oxystomus* Latr., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
- Galerita*, bombarding, SCHMITT, p. 42, Ent. News Philad. xv.
- Gazanus* n. g. near *Anchomenus*, p. 204, *G. elegans* n. sp., Rhodesia, p. 205, PÉRINGUEY, Ann. S. African Mus. iii.
- Graniger* (*Coscinia*) *rufotestaceus*, Bagdad, PIC, p. 89, Echange xx, n. sp.
- Graphipterus shebanus*, Transvaal, PÉRINGUEY, p. 183, Ann. S. African Mus. iii, n. sp.
- Harpalus davidianus* n. n. for *davidi* Tsch., TSCHITSCHERIN, p. xii, Annuaire Mus. St. Petersb. viii; *H. pexus*, characters, DANIEL, p. 66, Munchen. Kol. Zeitschr. ii.
- Hexagonia venusta*, p. 168, *umtalina angustula*, p. 169, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Hystichopus velox*, Cape Colony, PÉRINGUEY, p. 174, t. c. n. sp.
- Klepsiphrus angusticollis*, Natal, PÉRINGUEY, p. 175, t. c. n. sp.
- Lamosthenes naniscus* to *Platynus*, PÉRINGUEY, p. 296, t. c.
- Lebia indagacea*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlviii; *L. phantasma*, *simulatoria*, p. 178, *umtalina*, *inedita*, p. 179, *evicta*, p. 180, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii: n. spp.
- Lebistina spectabilis*, Transvaal, PÉRINGUEY, p. 181, t. c. n. sp.
- Leistus*; cf. *Chetoleistus*.
- Lionychus letulus*, Cape Colony, PÉRINGUEY, p. 176, Ann. S. African Mus. iii, n. sp.
- Lioscarites* n. n. for *Holcogaster* Chaud., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
- Macrochilus longicollis*, *spectandus*, p. 170, *varians*, p. 171, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Masoreus australis*, Townsville, SLOANE, p. 535, P. Linn. Soc. N. S. Wales xxix, n. sp.
- Mecodema leviceps*, p. 41, *striatum*, p. 42, *walkeri*, p. 43, New Zealand, BROWN, Ann. Nat. Hist. xiv, n. spp.
- Metallica* = (*Ungenia* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
- M. mashunensis*, Rhodesia, PÉRINGUEY, t. c. n. sp.
- Metazymorphus robustus*, Natal, PÉRINGUEY, p. 174, t. c. n. sp.
- Morio*, revision of Australian, SLOANE, pp. 530–533, P. Linn. Soc. N. S. Wales xxix.
- M. crassipes*, Cairns, id. p. 533, t. c. n. sp.
- Mystropomus*, characters and taxonomy, SLOANE, p. 704, t. c.
- Nebria atropes*, characters, DANIEL, p. 74, Munchen. Kol. Zeitschr. ii.
- N.* (*Epinebriola* subg. n.), *oxyptera*, Turkestan, DANIEL, p. 76, t. c. n. sp.
- Nebriosoma*, taxonomy, SLOANE, p. 703, P. Linn. Soc. N. S. Wales 1904.

- Notiophilus*, notes on European, DEVILLE, pp. 182, 183, Abeille xxx; *N. reitteri*, note, SEMENOW, p. 300, Rev. Russe Ent. 1904; *N. semenovi* ♂, SEMENOW, p. 313, t. c.
- Notonomus*, synonymical notes, TSCHITSCHÉRIN, p. 229, Rev. Russe Ent. iv.
- Ophonus hospes* and allies, characters and synonymy, DANIEL, pp. 1-15, Munchen. Kol. Zeitschr. i.
- Orthogonius apicalis*, Madagascar, FAIRMAIRE, p. 129, Bull. Soc. ent. France 1904, n. sp.
- Pamborus*, characters, table of species, SLOANE, pp. 701-703, P. Linn. Soc. N. S. Wales 1904.
- Penetretus rufipennis* var. n. *semipunctatus*, REITTER, p. 81, Wien. ent. Zeit. xxiii.
- Pentagonica dispar*, Natal, PÉRINGUEY, p. 191, Ann. S. African Mus. iii, n. sp.
- Perigona nigriceps* = (*Extromus pusillus* Pér.), PÉRINGUEY, p. 296, t. c.
- P. rufilabris* var. n. *infuscat*, SLOANE, p. 534, P. Linn. Soc. N. S. Wales xxix.
- Phlæozetus cribricollis*, *umtalinus*, Rhodesia, PÉRINGUEY, p. 177, Ann. S. African Mus. iii, n. spp.
- Platynus serbicus*, S. Servia, CSIKI, p. 148, Rov. Lapok 1904, n. sp., and Ann. Mus. Hungar. ii, p. 593; *P. (Megalonychus) umtalinus*, *P. (Anchomenus) insuetus*, p. 201, *emeritus*, *insolitus*, p. 202, *obsequiosus*, p. 203, *latiusculus*, p. 204, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : n. spp.
- Platysma (Pseudocorymbius) aquilonium*, N. Russia, TSCHITSCHÉRIN, p. 125, Horæ Soc. ent. Ross. xxxvii, n. sp.
- Platysphyrus* n. g. *Clivinini*, p. 710, *P. tibialis* n. sp., Australia, p. 711, SLOANE, P. Linn. Soc. N. S. Wales 1904.
- Polyhirma commista*, S. Africa, PÉRINGUEY, p. 184, Ann. S. African Mus. iii, n. sp.
- Pseudomasareus* n. g. for *Cymindis canigoulensis*, DESBROCHERS, p. 163, Frelon xii.
- Pseudophonus terrestris*, characters, DANIEL, p. 67, Munchen. Kol. Zeitschr. ii.
- Scaritini*: table of genera of Palæarctic, and of species of *Scarites*, with synonymy and distribution, TSCHITSCHÉRINE, pp. 257-265, Rev. Russe Ent. 1904.
- Scarites saxicola* = (*cyclopius* Fleisch.), Abeille xxx, p. 235; *S. basiplicatus* var. *sequenzi*, p. 29, var. *fleischeri*, p. 30, *bucida* var. n. *bucculentus*, p. 30, FLEISCHER, Vestnik. Klub. Prostejove ii; *S. salinus*, characters, var. n., KOENIG, p. 141, Wien. ent. Zeit. xxiii.
- S. cyclopius*, p. 30, *israelitus*, p. 31, Syria, FLEISCHER, Vestnik. Klub. Prostejove ii, n. spp.
- Stomini*, new sub-tribe, TSCHITSCHÉRIN, p. 150, Rev. Russe Ent. iv.
- Stomis*: table of species, SEMENOW, pp. 187-193, Horæ Soc. ent. Ross. xxxvii.
- S. hyrcanus*, N. Persia, TSCHITSCHÉRIN, Rev. Russe Ent. iv; *S. tschitscherini*, p. 152, *danielanus*, p. 153, Transcaucasus, SEMENOV, t. c. : n. spp.
- Styphromerus plausibilis*, Rhodesia, PÉRINGUEY, p. 173, Ann. S. African Mus. iii, n. sp.
- Tefftus*, KOLBE gives his taxonomy in an extended form, Berlin. ent. Zeitschr. xlix, pp. 117-158.
- T. angustipes* subsp. n. *winsanus*, p. 131, *violaceus wituensis* subsp. n., p. 134, KOLBE, t. c.
- Thalassophilus longicornis* = (*Trechus kokujevi* Tsch.), SEMENOV, p. 202, Rev. Russe Ent. iv.
- Thyreopteris angusticollis*, *lugubrinus*, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.

- Tichonia* n. n. for *Caletor* Tsch., SEMENOV, p. 201, Rev. Russe Ent. iv.
Trachypachys zetterstedti, localities, synonymy, SEMENOV, p. 37, t. c.
Trechus, *Anophthalmus* etc. and other subgen. discussed, GANGLBAUER, pp. 190–194, Munchen. Kol. Zeitschr. ii; *T. inornatus* n. n. for *quadrimaculatus* Fleisch., *T. caucasicola* n. n. for *caucasicus* Reitt., TSCHITSCHÉRIN, p. 148, Rev. Russe Ent. iv; *T. orpheus* var. n. *subparallelus*, ABEILLE, p. 199, Bull. Soc. ent. France 1904; *T. baldensis* varr. n., pp. 187–189, *T. longhii* var. n. *wingelmulleri*, l. c., GANGLBAUER, Munchen. Kol. Zeitschr. ii, and HOLDHAUS, t. c. p. 225.
T. (Duvalius) knauthi, Rhaetian Alps, GANGLBAUER, p. 190, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) diniensis*, with var. *cautus*, p. 201, *convexicollis*, p. 202, Basses-Alpes, PEYERIMHOFF, Bull. Soc. ent. France 1904; *T. (Anophthalmus) pueli*, Ariège, CHOBOUT, p. 212, Bull. Soc. ent. France 1904; *T. (Anophthalmus) vulcanus*, Ariège, ABEILLE, p. 198, Bull. Soc. ent. France 1904; *T. (Anophthalmus) holdhausi*, Venetian Alps, GANGLBAUER, p. 224, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) marice*, Dobratsch, SCHATZMAYR, p. 210, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) vranensis*, Herzegovina, BREIT, p. 28, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) velebiticus*, Croatia, GANGLBAUER, p. 350, Munchen. Kol. Zeitschr. ii; *T. concinnus*, Caucasus, TSCHITSCHÉRIN, p. 148, Rev. Russe Ent. iv : n. spp.
Tribax bibersteini var. n. *maljushenkoi*, KOENIG, p. 140, Wien. ent. Zeit. xxiii.
Trichosternus hudsoni, New Zealand, BROUN, Ann. Nat. Hist. xiv, p. 44, n. sp.
Umgenia; cf. *Metallica*.
Xenitenus natalicus, Natal, PÉRINGUEY, p. 176, Ann. S. African Mus. iii, n. sp.
Zabrus, monograph of Spanish and Portuguese, UHAGON, pp. 363–436, Mem. Soc. espan. ii.
Z. vasconicus, Spain, p. 393, *humeralis*, p. 424, Portugal, UHAGON, t. c. n. spp.
Zeloticus umtalianus, Rhodesia, PÉRINGUEY, p. 185, Ann. S. African Mus. iii, n. sp.

HALIPLIDÆ.

- Brychius rossicus* and *cristatus*, note, SEMENOV, pp. 303, 314, Rev. Russe Ent. 1904.
Haliphus flavicollis var. n. *pallida* (?*H. fulvicollis*=*jakolevi*); *H. fluvialis*=(*schaumi* Solsky), SEMENOV, p. 202, Rev. Russe Ent. iv; *H. variegatus*=(*maculatus* Motsch), SEMENOV, p. 216, t. c.; *H. transvolgensis* and *dalmatinus* queried; SEMENOV, p. 314, t. c.
H. transvolgensis, Saratov, SEMENOV, p. 216, t. c. n. sp.

DYTISCIDÆ.

[Cf. ABEILLE (3), GANGLBAUER (582), RÉGIMBART (1124, 1125).]

- Agabus labiatus* Brahm=(*femoralis* Payk.), BEDEL, 234, Abeille xxx.
Copelatus internus, Fernando Po, RÉGIMBART, p. 66, Ann. Mus. Genova xli;
C. geayi, Guiana, RÉGIMBART, p. 225, Bull. Mus. Paris 1904 : n. spp.
Hydroporus aubei varr., GANGLBAUER, p. 354, Munchen. Kol. Zeitschr. ii.
H. kocae, Slavonia, GANGLBAUER, p. 352, t. c. : n. sp.
Hyphydrus ovatus var., W. E. SHARP, p. 43, Ent. Mag. xl.
H. caviceps, Congo, RÉGIMBART, p. 64, Ann. Mus. Genova xli, n. sp.
Laccophilus virescens Brahm=(*obscurus* Panz.), BEDEL, p. 235, Abeille xxx.
L. flaviventris, Guiana, RÉGIMBART, p. 224, Bull. Mus. Paris 1904, n. sp.

Siettitia n. g. near *Hydroporus*, p. 226, for *S. balsetensis* n. sp., Var, in a deep well, p. 227, ABEILLE, Bull. Soc. ent. France 1904.

GYRINIDÆ.

Dineutes subserratus, Fernando Po, RÉGIMBART, p. 67, Ann. Mus. Genova xli, n. sp.
Gyrtes geayi, Guiana, RÉGIMBART, p. 226, Bull. Mus. Paris 1904, n. sp.

HYDROPHILIDÆ.

[Cf. BROWN (185), GANGLBAUER (580).]

The *Hydrophilidæ* of Europe, GANGLBAUER, pp. 141–286, Käf. Mitteleur. iv.
Dicyrtocercyon subg. n., *C. ustulatus* Preysl., GANGLBAUER, p. 276, t. c.
Hydræna, notes on French, DEVILLE, p. 187, Abeille xxx.
Limnebius paganettii, Dalmatia, GANGLBAUER, p. 261, Käf. Mitteleur. iv, n. sp.
Paraliocercyon subg. n., *C. depressum* etc., GANGLBAUER, p. 276, t. c.
Sphæridium scarabæoides in N. America, HOUGHTON, p. 310, Ent. News Philad. xv.
Thomosis n. g. near *Hydrostygne*, p. 273, for *T. guanicola* n. sp., Bounty isld., BROWN, Ann. Nat. Hist. xiv.

STAPHYLINIDÆ.

[Cf. BERNHAUER (107–109), BREIT (174), BROWN (184), BRUES (188), CAMERON (221), CASEY (248), FAUCONNET & VITURAT (480), FAUVEL (483–485, 487–491), GANGLBAUER (581–583), KLIMA (820), LEA (864), LUZE (895, 896), PENECKE (1016), PÉRINGUEY (1028), POPPIUS (1093, 1094, 1096), SCHATZMAYR (1223), WASMANN (1484A, 1486).]

The second part of Bernhauer's Palæarctic *Staphylinidæ*, published in 1902, is recorded only this year.

Ænictonia annommatophila, kohli, Congo, WASMANN, p. 637, Zool. Jahrb. Suppl. vii; *A. raffrayi*, Usambara, FAUVEL, p. 285, Rev. Ent. franc. 1904 : n. spp.
Agerodes germaini, pulcher, p. 225, *semiviolaceus*, p. 226, *capitalis*, p. 227, *denticulatus*, p. 228, *frater*, *quadriceps*, p. 229, S. America, BERNHAUER, Stettin. Ent. Zeit. lxx, n. spp.
Aleochara (Heterochara) glasunovi, Centr. Asia, LUZE, p. 113, Horæ Soc. ent. Ross. xxxvii; *A. andrewesi*, p. 66, *viatica*, p. 67, India, FAUVEL, Rev. Ent. franc. xxiii; *A. parvicollis*, Peru, BERNHAUER, p. 240, Stettin. Ent. Zeit. lxx : n. spp.
Alianta phlæoporina, Sinai, FAUVEL, p. 72, Rev. Ent. franc. xxiii, n. sp.
Amarochara ocaleoides, p. 166, *korbi*, p. 167, Asia Minor, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, n. spp.
Anœus cordicollis, Madagascar, FAUVEL, p. 296, Rev. Ent. franc. 1904, n. sp.
Anisopsis n. g., near *Oxytelus*, *flexuosa*, Zambesi, p. 108, *carinata*, Zanzibar, p. 109, n. spp., FAUVEL, t. c.
Annomatophilus n. g. near *Pygostenus*, p. 642, *A. kohli*, pl. xxxii, fig. 13, *minor*, *tenellus*, n. spp., Congo, p. 643, WASMANN, Zool. Jahrb. Suppl. vii.
Anommatoxenus n. g. near *Pygostenus*, p. 656, *A. clypeatus*, n. sp., Congo, p. 657, pl. xxxii, fig. 16, WASMANN, t. c.
Anthobium sikkimi, Darjeeling, FAUVEL, p. 88, Rev. Ent. franc. xxiii, n. sp.

- Apatetica semiviolacea*, Java, *rotundicollis*, Khasia hills, p. 85, *sparsicollis*, Lombok, *levicollis*, Tonkin, p. 86, FAUVEL, t. c. **n. spp.**
- Astenus melanurus* var. *subnotatus*, FAUVEL, p. 51, t. c.
- Astilbus incola*, India, FAUVEL, p. 63, t. c. **n. sp.**
- Atemeles pratensisoides*, Luxemburg, WASMANN, p. 10, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Atheta bertolinii*, Italy, PORTA, Riv. Col. ital. ii, ?p. 130 [not seen by Recorder]; *A. (Hydrossecta) orientis*, Sinai, FAUVEL, p. 71, Rev. Ent. franc. xxiii; *A. (Aloconota) frontalis*, Central Asia, LUZE, p. 108, Horæ Soc. ent. Ross. xxxvii; *A. nilgiriensis*, India, FAUVEL, p. 62, Rev. Ent. franc. xxiii; *A. pubicollis*, Australia, p. 238, *dohrni*, Ecuador, p. 239, BERNHAUER, Stettin Ent. Zeit. lxxv : **n. spp.**
- Baptopoda* subg. n. of *Oxypoda*, BERNHAUER, p. 47, Verh. Ges. Wien 1902, Beiheft.
- Belonuchus quadriceps*, p. 287, *holisinus*, p. 288, Usambara, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Bledius glasunovi*, Centr. Asia, LUZE, p. 87, Horæ Soc. ent. Ross. xxxvii; *B. distans*, p. 304, *perrieri*, *lugubris*, p. 305, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *B. bellicosus*, Sumatra, *conicicollis*, Tonkin, p. 111, *arenicola*, Malabar, *helferi*, Burma, p. 112; FAUVEL, t. c. : **n. spp.**
- Bolbophites* n. g. near *Ophites*, p. 278, *pustulosus*, pl. i, fig. 2, *aspericeps*, **n. spp.**, Brazil, p. 279, FAUVEL, t. c.
- Bolitochara semiaspera*, India, FAUVEL, p. 65, t. c. **n. sp.**
- Bombylodes* n. g. for *Bombylius* Fauv., FAUVEL, p. 43, t. c.
- Boopinus* subg. n. of *Trogophlæus*, for *T. memnonius* etc.; KLIMA, p. 56, Munchen. Kol. Zeitschr. ii.
- Boreaphilus sahlbergi*, E. Siberia, POPPIUS, p. 106, Medd. Soc. Faun. Fenn. 1902/03, **n. sp.**
- Bryothinusa* n. g. near *Thinusa*, p. 312, *B. catalinæ* **n. sp.**, California, p. 313, CASEY, Canad. Ent. xxxvi.
- Canonica æthiopica*, Usambara, FAUVEL, p. 284, Rev. Ent. franc. 1904, **n. sp.**
- Coprophilus striatipennis* Epp., valid, LUZE, p. 80, Horæ Soc. ent. Ross. xxxvii.
- C. (Zonophilus) reitteri*, Centr. Asia, LUZE, p. 69, Munchen. Kol. Zeitschr. ii; *C. bimaculatus*, Centr. Asia, LUZE, p. 79, Horæ Soc. ent. Ross. xxxvii; *C. alticola*, Himalaya, FAUVEL, p. 93, Rev. Ent. franc. 1904 : **n. spp.**
- Coryphium gredleri* var. n. *dilutipes*, GANGLBAUER, p. 197, Munchen. Kol. Zeitschr. ii.
- C. parvulum*, E. Siberia, POPPIUS, p. 107, Medd. Soc. Faun. Fenn. 1902/03, **n. sp.**
- Crymus* n. g. near *Planeustomus*, p. 92, *C. antarcticus* **n. sp.**, New South Georgia, p. 93, FAUVEL, Rev. Ent. franc. xxiii.
- Cryptobium extraneum*, Bengal, FAUVEL, p. 55, t. c.; *C. myrmecocephalum*, Clarence Riv., pl. iv, fig. 3, p. 71, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Delopsis microphthalma*, Java, FAUVEL, p. 95, Rev. Ent. franc. 1904, **n. sp.**
- Demera kohli*, *nitida*, Congo, WASMANN, p. 630, Zool. Jahrb. Suppl. vii, **n. spp.**
- Deropoda* subg. n. of *Oxypoda*, BERNHAUER, p. 48, Verh. Ges. Wien lii, Beiheft.
- Dicæa ventralis*, W. Australia, p. 73, *ruficollis*, N. S. W., p. 74, with var. *nigri ventris*, p. 75, LEA, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Diglossa peyerimhoffi*, p. 73, *cameroni*, p. 74, Red Sea, FAUVEL, Rev. Ent. franc. xxiii; *D. testacea*, *subtilissima*, Perim, CAMERON, p. 157, Ent. Mag. xl : **n. spp.**
- Dinusa æthiopica*, W. Africa, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, p. 15, **n. sp.**

- Discoxenus* n. g. near *Doryloxenus*, p. 655, *D. lepisma*, *assmuthi*, India, p. 66, n. spp., WASMANN, Zool. Jahrb. Suppl. vii.
- Dorylocerus* n. g. near *Dorylobius*, p. 627, for *D. fossulatus* n. sp., Congo, p. 628, WASMANN, t. c.
- Dorylogaster* n. g. *Aleocharinorum*, p. 625, for *D. longipes* n. sp., p. 626, pl. xxx, fig. 4, West Africa, with *Anomma*, WASMANN, t. c.
- Dorylomimus* n. g. near *Mimeciton*, p. 620, for *D. kohli* n. sp., Congo, p. 622, WASMANN, t. c.
- Dorylonia* n. g. near *Myrmedonia*, *D. laticeps*, pl. xxxi, fig. 8, n. sp., Congo, WASMANN, p. 635, t. c.
- Dorylonilla* n. g. near *Notothecata*, *D. spinipennis*, pl. xxx, fig. 6, n. sp., Congo, WASMANN, p. 631, t. c.
- Dorylophila* n. g. near *Aleochara*, p. 632, *D. rotundicollis* n. sp., Congo, p. 633, pl. xxxi, fig. 7; WASMANN, t. c.
- Dorylopora* n. g. near *Dorylobius*, p. 628, for *D. costata*, pl. xxx, fig. 5, *kohli*, n. spp., Congo, p. 629, WASMANN, t. c.
- Doryloxenus annulatus*, p. 653, *eques*, *kohli*, *hirsutus*, p. 654, Africa, *transfuga*, *termitophilus*, p. 655, WASMANN, t. c. : n. spp.
- Dromeciton* n. g. near *Tetradonia*, p. 282, *wagneri* n. sp., Brazil, p. 283, pl. i, fig. 4, FAUVEL, Rev. Ent. franc. 1904.
- Eccoptyoglossa* n. g. near *Myrmecopora*, p. 105, *E. obscura* n. sp., Central Asia, p. 106, LUZE, Horæ Soc. ent. Ross. xxxviii.
- Ectonipodia* and *Eciton*, relations, BRUES, p. 21, Psyche xi.
- Ecitonora nitidiventris*, Texas, BRUES, p. 250, Ent. News Philad. xv, n. sp.
- Eleusis planicollis* MacL. = (*australis* Fauv.), LEA, p. 77, P. Linn. Soc. N. S. Wales xxix.
- Eleusis comadti*, *kolbei*, Usambara, FAUVEL, p. 292, Rev. Ent. franc. 1904; *E. perrieri*, *apicalis*, p. 298, *heterodera*, *boops*, p. 299, *hydrocephala*, p. 300, Madagascar, FAUVEL, t. c.; *E. rufiventris*, p. 81, *confrons*, Sumatra, *warburgi*, Celebes, p. 82, *discalis*, Sumatra, *plagiata*, *rotundiceps*, Sikkim, p. 83, *quadridens*, Perak, *lunigera*, Malasia, p. 84, FAUVEL, t. c.; *E. spectabilis*, p. 4, *propinqua*, p. 5, *brachyptera*, *rectangulum*, p. 6, *bicarinata*, p. 7, *bisulcata*, p. 8, Madagascar, *mutica*, Gaboon, p. 9, BERNHAUER, Verh. Ges. Wien liv; *E. cephalotes*, Mexico, BERNHAUER, p. 218, Stettin Ent. Zeit. lxxv : n. spp.
- Erchomus aluticollis*, New Guinea, FAUVEL, p. 295, Rev. Ent. franc. 1904, n. sp.
- Eulissus silvaticus*, p. 230, Madagascar, *purpuripennis*, Shanghai, p. 231, BERNHAUER, Stettin Ent. Zeit. lxxv, n. spp.
- Eunonia* n. g. *Omalini*, p. 313, *E. keeniana* n. sp., Brit. Columbia, p. 314, CASEY, Canad. Ent. xxxvi.
- Eupsorus* n. g. ? near *Omalium*, p. 45, for *E. costatus* n. sp., New Zealand, p. 46, BROUN, Ann. Nat. Hist. xiv.
- Euryalea mongolica*, Shanghai, BERNHAUER, p. 132, Verh. Ges. Wien 1902, Beiheft, n. sp.
- Falagria nilgiriensis*, India, FAUVEL, p. 62, Rev. Ent. franc. xxiii, n. sp.
- Geodromicus punctulatus*, p. 77, *ovalis*, p. 78, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, n. spp.
- Geostiba aurogemmata*, Algeria, FAUVEL, p. 75, Rev. Ent. franc. xxiii, n. sp.
- Haploderus speculiventris*, Java, FAUVEL, p. 97, t. c. n. sp.
- Holosus tenuicornis*, Gaboon, p. 13, *plicatus*, p. 14, *elegans*, *sumatrensis*, p. 15, Sumatra, BERNHAUER, Verh. Ges. Wien liv; *H. sinuatus*, Mentawai, BERNHAUER, p. 217, Stettin Ent. Zeit. lxxv; *H. parcestriatus*, Java, *pennifer*, Annam, p. 76, *brevipennis*, *insularis*, Malasia, p. 77, *aberrans*, Ceylon, p. 78, FAUVEL, Rev. Ent. franc. xxiii : n. spp.
- Holotrochus coriaceus*, p. 306, *nigrita*, *nitescens*, p. 307, *marginicollis*, *specularis*, p. 308, *fairmairei*, p. 309, Madagascar, FAUVEL, t. c. n. sp.
- Homalium* (*Phlecostiba*) *usambara*, Africa, FAUVEL, p. 291, t. c. ; *H. hova*,

- p. 300, *costipenne*, p. 301, Madagascar, FAUVEL, t. c.; *H. sulcicollis*, *chlorizans*, *obesum*, p. 89, *rude*, p. 90, Sumatra, FAUVEL, t. c. : **n. spp.**
- Homalota crenulata*, India, FAUVEL, p. 65, t. c. **n. sp.**
- Hoplandria mirabilis*, Peru, BERNHAUER, p. 237, Stettin Ent. Zeit. lxxv, **n. sp.**
- Hoplitodes* **n. g.** p. 109, *echidne*, **n. sp.**, Natal, p. 110, FAUVEL, Rev. Ent. franc. 1904.
- Lathrobium (Glyptomerus) wingelmulleri*, Adamello-Alps, BREIT, p. 29, Munchen. Kol. Zeitschr. ii; *L. sinaicum*, Sinai, FAUVEL, p. 71, Rev. Ent. franc. xxiii : **n. spp.**
- Leistotrophus africanus*, Cameroons, BERNHAUER, p. 236, Stettin Ent. Zeit. lxxv, **n. sp.**
- Leptacinus apicipennis*, St. Thomas, BERNHAUER, p. 234, t. c. **n. sp.**
- Leptusa (Typhlopasilis) pinkeri*, Mt. Adamello, GANGLBAUER, p. 196, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Lesteva turkestanica*, Seravschan, LUZE, p. 76, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Lispinus usambaræ*, *insignicollis*, Usambara, FAUVEL, p. 293, Rev. ent. franc. 1904; *L. varians*, p. 296, *agnatus*, p. 297, *obscurus*, p. 298, Madagascar, FAUVEL, t. c.; *L. macropterus*, Celebes, p. 78, *validicornis*, Queensland, *sulcatus*, New Guinea, p. 79, *rugipennis*, *acicularis*, *quadrinotatus*, p. 80, Java, *binotatus*, New Guinea, p. 81, FAUVEL, t. c.; *L. pubiventris*, Gaboon, p. 10, *specularis*, Nias isl., p. 11, *curticollis*, Tonkin, *elongatus*, Sumatra, p. 12, BERNHAUER, Verh. Ges. Wien liv : **n. spp.**
- Maseochara indica*, Nilgiri hills, *javana*, Borneo, etc., FAUVEL, p. 66, Rev. Ent. franc. xxiii, **n. spp.**
- Maurachelia* subg. **n.** of *Oxyptoda*, BERNHAUER, p. 48, Verh. Ges. Wien 1902, Beiheft.
- Medon mimeticus*, Madagascar, BERNHAUER, p. 224, Stettin Ent. Zeit. lxxv, **n. sp.**
- Megacronus lineipennis*, India, FAUVEL, p. 60, Rev. Ent. franc. xxiii, **n. sp.**
- Megalops hova*, *bifenestratus*, p. 309, *cribriceps*, p. 310, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *M. brevipennis*, Brazil, BERNHAUER, p. 222, Stettin Ent. Zeit. lxxv : **n. spp.**
- Megarthus prosseni*, Dobratsch, SCHATZMAYR, p. 212, Munchen. Kol. Zeitschr. ii; *M. bimaculatus*, Ceylon, *basicornis*, Sikkim, FAUVEL, p. 87, Rev. Ent. franc. xxiii : **n. spp.**
- Microglossa rugipennis*, Seravschan, LUZE, p. 114, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Mimophites* **n. g.** near *Ophites*, p. 280, *bouvieri*, pl. i, fig. 3, *laticeps* **n. spp.**, Brazil, p. 281, FAUVEL, Rev. Ent. franc. 1904.
- Mitomorphus obsoletus*, India, FAUVEL, p. 56, t. c. **n. sp.**
- Mycetoporus sibiricus*, E. Siberia, POPPIUS, p. 1, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Myrmedonia kohli*, *pedisequa*, Congo, WASMANN, p. 634, Zool. Jahrb. Suppl. vii; *M. termitobia*, p. 206, *termitophila*, p. 207, *compransor*, p. 208, *simplex*, *uncinata*, p. 209, *proca*, p. 210, *puncticollis*, p. 211 *mima*, p. 212, *capicola*, *gentilis*, p. 213, *jucunda*, *gravidula*, p. 214, *illotula*, p. 215, *hirtella*, *conifera*, p. 216, *constrictata*, *anthracina*, p. 217, *gracilicornis*, p. 218, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**
- Ocalea*, cf. *Sorecocephala*.
- Ocyptus similis*, variation of wings, MÜLLER, p. 171, var. **n.** *semialatus*, p. 172, Wien. ent. Zeit. xxiii.
- Ocyusa hibernica*, Rye, note, NEWBERY, p. 251, Ent. Mag. xl; *O. laticollis* Thoms. = (*hybernica* Rye), BERNHAUER, p. 140, Verh. Ges. Wien 1902, Beiheft.

- O. araxis*, Caucasus, p. 139, *fortepunctata*, Turkestan, p. 145, *caucasica*, Caucasus, p. 147, *O. (Parocysa* subg. n.) *holdhausi*, Carinthia, p. 149, BERNHAUER, t. c. n. spp.
- Ædichirus ventralis*, *rufitarsis*, p. 318, *kolbei*, p. 319, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *Æ. tricolor*, Australia and Tasmania, p. 61, pl. iv, fig. 1, *terminalis*, N. W. Australia, p. 62, LEA, P. Linn. Soc. N. S. Wales xxix : n. spp.
- Omalium nitidicolle*, p. 108, *obscuricorne*, p. 110, Lapland, POPPIUS, Medd. Soc. Faun. Fenn. 1902/03; *O. arenarium*, Cape Good Hope, BERNHAUER, p. 16, Verh. Ges. Wien liv : n. spp.
- Ösorius sparsior*, Usambara, FAUVEL, p. 291, Rev. Ent. franc. 1904; *O. alutaceus*, Madagascar, *truncorum*, Zanzibar, p. 17, *eppelsheimi*, Mentawai, p. 18, *eggersi*, St. Thomas, p. 19, BERNHAUER, Verh. Ges. Wien liv; *O. strangulatus*, India, FAUVEL, p. 47, Rev. Ent. franc. xxiii : n. spp.
- Oxyopoda arabs*, Sinai, FAUVEL, p. 72, t. c.; *O. asiatica*, Turkestan, p. 74, *skalitzkyi*, Europe, p. 75, *pubescens*, Italy, p. 76, *doderoi*, Europe, p. 78, *O. (Deropoda* subg. n.) *cingulum*, Syria, p. 87, *caucasica*, Caucasus, *nova*, S. Europe, p. 94, *O. (Maurachelia* subg. n.) *pilosicollis*, Europe, p. 97, *antennata*, Turkey, p. 98, *schusteri*, Balkans and East Siberia, p. 104, *incognita*, Bucharest, p. 107, *fortepunctata*, Caucasus, p. 108, *meridionalis*, Greece and Syria, p. 114, *fauveli*, E. Siberia, p. 115, *minutissima*, S. Europe, p. 122, *longicollis*, Crimea, p. 123, BERNHAUER, Verh. Ges. Wien 1902, Beiheft : n. spp.
- Oxytelopsis madecassa*, Tananarive, *genalis*, Perak, FAUVEL, p. 96, Rev. Ent. franc. 1904, n. spp.
- Oxytelus africanus* n. n. for *flavipennis* Epp. nec Kr., LUZE, p. 83, Horæ Soc. ent. Ross. xxxvii.
- O. excellens*, p. 81, *robusticornis*, p. 82, *luridipennis*, p. 84, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii; *O. lobatus*, p. 303, *anticus*, p. 304, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *O. bubalus*, Java, p. 97, *atriceps*, p. 98, Celebes, *megacephalus*, India, *gigantulus*, p. 99, *migrator*, Siam, *ruptus*, Java, p. 100, *heterophthalmus*, N. S. Wales, *dilutipennis*, W. Africa, p. 101, *planus*, Abyssinia, *nitidipennis*, Madagascar, p. 103, *claviger*, Abyssinia, *incisicollis*, E. Africa, p. 104, *bicolor*, Madagascar, Gaboon, p. 104, *sculptiventris*, Madagascar, p. 105, *crassus*, *speculum*, p. 106, *dentifrons*, S. America, *scorpio*, St. Domingo, p. 107, FAUVEL, t. c.; *O. curtus*, p. 219, *rugicollis*, p. 220, Australia, *opacinus*, Brazil, p. 221, BERNHAUER, Stettin Ent. Zeit. lxx : n. spp.
- Pachycorinus ganglbaueri*, Madagascar, BERNHAUER, p. 234, t. c. n. sp.
- Pæderus usambaræ*, Africa, FAUVEL, p. 290, Rev. Ent. franc. 1904; *P. andrevesi*, p. 53, *gratiosus*, p. 54, India, FAUVEL, t. c.; *P. trimerus*, N. Guinea, FAUVEL, p. 294, Rev. Ent. franc. 1904 : n. spp.
- Palaminus suturalis*, p. 319, *madecassa*, *pennifer*, *nossibianus*, p. 320, *allocerus*, *brunneus*, *circumflexus*, p. 321, Madagascar, FAUVEL, t. c.; *P. simoni*, India, FAUVEL, p. 50, t. c. : n. spp.
- Parosorius* n. g. for *Anceus foersteri*, BERNHAUER, p. 222, Stettin Ent. Zeit. lxx.
- Parocalea* n. g. for *Ilyobates baicalica* Eppelsh., BERNHAUER, p. 169, Verh. Ges. Wien 1902 Beiheft.
- Parocysa* subg. n. cf. *Ocyusa*.
- Philonthus tantulus*, p. 94, *indubius*, p. 95, *elegantulus*, p. 97, *P. (Gabrius) insignis*, p. 98, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, n. spp.
- Phleopora opaca*, Europe, p. 194, *secreta*, Caspian, p. 196, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, n. spp.
- Phyllodrepa (Dropephylla) gobanzi*, Dalnatiia, GANGLBAUER, p. 650, Verh. Ges. Wien liv, n. sp.

- Pinophilus piceus*, India, FAUVEL, p. 51, Rev. Ent. franc. xxiii; *P. eppelsheimi*, Sumatra, BERNHAUER, p. 223, Stettin Ent. Zeit. lxxv : **n. spp.**
- Placusa simulans*, Usambara, FAUVEL, p. 286, Rev. Ent. franc. 1904, **n. sp.**
- Planeustomus indicus*, Burma, FAUVEL, p. 91, t. c. **n. sp.**
- Platyola simplex*, Gaboon, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, p. 41, **n. sp.**
- Platyprosopus niloticus*, Abyssinia, FAUVEL, p. 275, Rev. Ent. franc. 1904, **n. sp.**
- Platystethus spinicornis*, p. 85, *flavipennis*, p. 86, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, **n. spp.**
- Polychelus* **n. g.** *Omalini*, p. 74, *P. aneipennis* **n. sp.**, Centr. Asia, p. 75, LUZE, t. c.
- Psilotrachus* **n. g.** near *Ancyrophorus*, p. 69, *P. elegans* **n. sp.**, Turkestan, p. 70, LUZE, Munchen. Kōl. Zeitschr. ii.
- Pygostenus pusillus*, p. 646, *bicolor*, *levicollis*, p. 647, *fauveli*, *splendidus*, *luje*, *pubescens*, p. 648, *setulosus*, *kohli*, *longicornis*, *alutaceus*, p. 649, Africa, WASMANN, Zool. Jahrb. Suppl. vii, **n. spp.**
- Quedius luridipennis* MacL. = (*semiviolaceus* Blackb.), LEA, p. 65, P. Linn. Soc. N. S. Wales xxix.
- Q.* (*Microsaurus*) *kraussi*, Herzegowina, PENECKE, p. 135, Wien. ent. Zeit. xxiii; *Q.* (*Ediquus*) *solskyi*, p. 99, *rufilabris*, p. 100, *Q.* (*Microsaurus*) *fusicornis*, p. 101, *Q.* (*Sauridus*) *imitator*, p. 102, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii : **n. spp.**
- Scopæus triangularis*, Seravschan, LUZE, p. 90, t. c. **n. sp.**
- Scytoglossa* **n. g.** *Myrmedoniini*, p. 109, *S. delicata*, **n. sp.**, Seravschan, p. 110, LUZE, t. c.
- Sorecocephala* subg. **n.** for *Ocalea reitteri*; BERNHAUER, p. 159, Verh. Ges. Wien 1902, Beiheft.
- Staphylinus* (*Ocypus*) *langei*, Congo, BERNHAUER, p. 235, Stettin Ent. Zeit. lxxv; *S.* (*Trichoderma*) *glasunovi*, p. 92, *S.* (*Tasgius*) *transversiceps*, p. 93, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii; *S. suspectus*, India, FAUVEL, p. 57, Rev. Ent. franc. xxiii : **n. spp.**
- Stenus parilis*, Centr. Asia, LUZE, p. 88, Horæ Soc. ent. Ross. xxxvii; *S. protector*, *irroreus*, p. 311, *uniformis*, *volvulus*, p. 312, *obconicus*, *nirvus*, p. 313, *alluaudi*, *sicardi*, p. 314, *goudoti*, *dieganus*, p. 315, *chloropterus*, *pluripunctus*, *creberrimus*, p. 316, *troile*, *delphinus*, p. 317, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *S. belli*, p. 47, *ventricosus*, p. 48, *andrewesi*, *consors*, *millepunctus*, p. 49, India, FAUVEL, t. c. : **n. spp.**
- Stilicoderus umbratus*, India, FAUVEL, p. 52, t. c. **n. sp.**
- Stilicus quadrimaculatus*, Usambara, FAUVEL, p. 289, t. c.; *S. anommatophilus*, Congo, WASMANN, p. 658, Zool. Jahrb. Suppl. vii : **n. spp.**
- Suniopsis politus*, pl. iv, fig. 2, W. Australia, LEA, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Sunius lithocharoides* var. **n.** *quadrimaculatus*, LUZE, p. 90, Horæ Soc. ent. Ross. xxxvii.
- S. gracilicornis*, Seravschan, LUZE, p. 89, t. c.; *S. apiciflavus*, p. 68, *trilineatus*, p. 69, *brevicollis*, pl. iv, fig. 13, p. 70, Australia, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Sympolemon tiro*, Congo, WASMANN, pl. xxxii, fig. 12, p. 641, Zool. Jahrb. Suppl. vii, **n. sp.**
- Tachinus tundre*, p. 1, *jacuticus*, p. 2, *ochoticus*, p. 5, East Siberia, POPPIUS, Ofv. Finska Forh. xlv, No. 13; *T. splendens*, Seravschan, LUZE, p. 103, Horæ Soc. ent. Ross. xxxvii : **n. spp.**
- Tachyporus gracilicornis*, Seravschan, LUZE, p. 104, t. c. **n. sp.**
- Tetradelus* **n. g.**, new tribe near *Homaliini*, p. 90, *T. trigonuroides* **n. sp.**, Sikkim, p. 91, FAUVEL, Rev. Ent. franc. xxiii.

- Trilobitideus paradoxus*, Port Elizabeth, p. 619, *insignis*, Congo, p. 620, WASMANN, Zool. Jahrb. Suppl. vii, n. spp.
- Trogophleus*, revision of palaearctic, subg. n. cf. *Boopinus*, KLIMA, pp. 43-66, Munchen. Kol. Zeitschr. ii.
- T. bernhaueri*, Irkutsk, p. 50, *reitteri*, Corfu, p. 57, *heydeni*, Turkestan, p. 59, KLIMA, t. c.; *T. alluaudi*, *dieganus*, p. 302, *malgaceus*, *boops*, p. 303, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *T. (Thinodromus) brevicornis*, Seravschan, LUZE, p. 80, Horæ Soc. ent. Ross. xxxvii; *T. fuscipalpis*, Ceylon, *lepidicornis*, Celebes, FAUVEL, p. 94, Rev. Ent. franc. 1904; *T. pustulatus*, p. 20, *socius*, Annam, *brasiliensis*, p. 21, *fortepunctatus*, p. 22, Brazil, *caseyi*, N. America, p. 23, *varicornis*, Grenada, p. 24, BERNHAUER, Verh. Ges. Wien liv, n. spp.
- Xantholinus olliffi*, valid, characters, LEA, p. 66, P. Linn. Soc. N. S. Wales xxix.
- X. (Audobius) pictipennis*, Africa, FAUVEL, p. 289, Rev. Ent. franc. 1904; *X. insularis*, Madagascar, p. 232, *bilimeki*, Mexico, p. 233, BERNHAUER, Stettin Ent. Zeit. lxx; *X. cinctus*, India, FAUVEL, p. 56, Rev. Ent. franc. xxiii : n. spp.
- Xerophygus ocularis*, Sumatra, FAUVEL, p. 95, t. c. n. sp.
- Zyras forticornis*, India, FAUVEL, p. 64, t. c.; *Z. plasoni*, Australia, BERNHAUER, p. 240, Stettin Ent. Zeit. lxx : n. spp.

PSELAPHIDÆ.

- [Cf. BROUN (184), DODERO (396, 397), FAUCONNET & VITURAT (480), GANGLBAUER (581), HOLDHAUS (695), MÜLLER (972), NORMAND (982), PEYERIMHOFF (1042, 1043), PIC (1071, 1077), RAFFRAY (1114), REITTER (1147), SCHATZMAYR (1223), WASMANN (1485).]
- RAFFRAY gives a catalogue and genera of the family, as well as a large number of new species; of the 18 tribes 5 are new, and the name *Bryasini* gives place to *Brachyglutini*. The synonymy is not given by the Recorder below except when new nomenclature is involved. Ann. Soc. ent. France 1903 and 1904.
- Termitophilous *Pselaphidæ*, WASMANN, pp. 3-5, Jägerskiöld exp., No. 13. The sexual characters of *Bythinus*, DODERO, pp. 466-468, Ann. Mus. Genova xli.
- Achillia convexiceps*, p. 135, *picea*, *cordicollis*, p. 136, *clavata*, *quadratriceps*, p. 137, *latifrons*, *blanchardi*, p. 138, *elfridæ*, *brevicornis*, p. 139, Chile, RAFFRAY, Ann. Soc. ent. France 1905, n. spp.
- Adiastulus* n. g. for *Oxarthrius ophthalmicus*, RAFFRAY, p. 638, Ann. Soc. ent. France 1904.
- Amauronyx barnevillei* = (*Euplectus guillebeaudi* Xamb.), NORMAND, p. 200, Bull. Soc. ent. France 1900.
- A. bedeli*, Tunis, NORMAND, p. 213, Abeille xxx, n. sp.
- Amaurops pinkeri*, Mt. Adamello, GANGLBAUER, p. 195, Munchen. Kol. Zeitschr. ii, n. sp.
- Anasis impunctata*, Sumatra, RAFFRAY, p. 178, Ann. Soc. ent. France 1904, n. sp.
- Anasopsis* n. g. for New Caledonian *Anasis*, RAFFRAY, p. 179, t. c.
- Ancyrocerus carinatus*, Sumatra, RAFFRAY, p. 383, t. c. n. sp.
- Apharina nodula*, p. 311, *armata*, p. 312, Sumatra, RAFFRAY, t. c. n. spp.
- Aploderina* n. g. near *Hamotus*, *A. sulcicornis* n. sp., Bolivia, RAFFRAY, p. 386, t. c.
- Aporhexius* n. g. p. 593, *A. pubescens* n. sp., Bolivia, p. 594, RAFFRAY, Ann. Soc. ent. France 1903.
- Arhytodes brevicornis*, *brasiliensis*, S. America, RAFFRAY, p. 433, Ann. Soc. ent. France 1904, n. spp.

- Arthmius pedestrianus*, Mexico, p. 16, *transversalis*, *labiatus*, Brazil, p. 17, RAFFRAY, t. c. n. spp.
- Asymoplectus flagellatus*, S. Africa, RAFFRAY, p. 538, Ann. Soc. ent. France 1903, n. sp.
- Atenisodus* n. g. near *Comatopselaphus*, *A. macrophthalmus* n. sp., Sumatra, RAFFRAY, p. 121, Ann. Soc. ent. France 1904.
- Balega dentata*, Mexico, RAFFRAY, p. 511, Ann. Soc. ent. France 1903, n. sp.
- Batocenus dimidiatus*, Bolivia, *incertus*, Amazons, RAFFRAY, p. 39, Ann. Soc. ent. France 1904, n. spp.
- Batraxis tumorosa*, p. 118, Sumatra, *indica*, India, *parvispina*, Sumatra, p. 119, *obesa*, Philippines, p. 120, RAFFRAY, t. c. n. spp.
- Batribolbus* n. g. for part of *Eubatraxis*, RAFFRAY, p. 60, t. c.
- Batrissiella* n. g. for *Eubatraxis caviventris*, RAFFRAY, p. 59, t. c.
- Batrisinus elegans*, *gravidus*, Sumatra, RAFFRAY, p. 58, t. c. n. spp.
- Batrisodes obesus*, p. 23, *luteolus*, p. 24, *tricarinatus*, *tuberculatus*, p. 25, *acinosus*, p. 26, *ferinus*, p. 27, *tenuicornis*, *multiforus*, p. 28, *infandus*, p. 29, *patranus*, *nodosus*, p. 30, *indecorus*, *mauritiis*, p. 31, *irritus*, p. 32, *demissus*, *sagax*, p. 33, Sumatra, *harmundi*, p. 34, *epistomalis*, p. 35, Japan, RAFFRAY, t. c. n. spp.
- Batrisomalus* n. g. for pt. of *Batraxis*, with *B. infossus* n. sp., S. India, RAFFRAY, p. 60, t. c.
- Batrisoscenus siamensis*, Siam, *furcifer*, p. 43, *tumorosus*, *triangulatus*, p. 44, *truncatus*, *nitratu*s, p. 45, *vulneratus*, *carinatus*, p. 46, *trigona*, *longipes*, p. 47, *cameratus*, p. 48, *formicatus*, *binodosus*, p. 49, *calcaratus*, Sumatra, *saucipes*, China, p. 50, *deformipes*, p. 51, *cultripes*, p. 52, *major*, Sumatra, *sinensis*, China, p. 53, *indecorus*, Sumatra, *annamita*, Hué, p. 54, *quadratriceps*, p. 55, *immundus*, *capitatus*, p. 56, Sumatra, *carinicolis*, Botany bay, p. 57, RAFFRAY, t. c. n. spp.
- Biblomimus* n. g. *B. minutus* n. sp., Antilles, RAFFRAY, p. 545, op. cit. 1903.
- Bibleptes parviceps*, Cape G. H., RAFFRAY, p. 545, t. c. n. sp.
- Braxyda* n. gen. near *Achillia*, *B. hamata*, p. 145, *crassipes*, p. 146, n. spp., Bolivia, RAFFRAY, op. cit. 1904.
- Brachygluta caligata*, var. n. *depressifrons*, NORMAND, p. 215, Abeille xxx.
- B. bicaudata*, Tunis, NORMAND, p. 215, t. c. n. sp.
- Bryaxina* n. g. near *Achillia*, p. 140, *B. torticornis*, *armiceps*, p. 142, *lucida*, *clavata*, *dimidiata*, p. 143, *schaufussi*, *foveifrons*, p. 144, *crassicornis*, p. 145, Brazil, n. spp., RAFFRAY, Ann. Soc. ent. France 1904.
- Bryaxis* cf. *Bythinus*.—*B. sculptifrons* var. n. *roumanie*, *B. nodicornis* var. n. *montandoni*, RAFFRAY, p. 263, t. c.
- B. (Reichenbachia) mundicornis*, Bagdad, PIC, p. 49, Exchange xx, n. sp.
- Bunoderus* n. g. near *Brachygluta*, p. 151, *B. carinicolis*, Mexico, *longipilis*, Brazil, n. spp., p. 152, RAFFRAY, Ann. Soc. ent. France 1904.
- Bythinoplectus acutangulus*, Grenada, p. 503, *transversiceps*, Brazil, p. 504, RAFFRAY, op. cit. 1903, n. spp.
- Bythinus* anctt. to be called *Bryaxis* Kug., and the *Bythinini* to be called *Tychini*, RAFFRAY, pp. 254 etc., op. cit. 1904.
- B. (Bythoxenus) guignardi*, Basses-Alpes, PEYERIMHOFF, p. 214, Bull. Soc. ent. France 1904; *B. noesskei*, Rhaetian Alps, GANGLBAUER, p. 194, Munchen. Kol. Zeitschr. ii; *B. trigonoceras*, Mte. Cavallo, HOLDHAUS, p. 227, Munchen. Kol. Zeitschr. ii; *B. heterocerus*, Dalmatia, MÜLLER, p. 208, Munchen. Kol. Zeitschr. ii; *B. (Bythoxenus) aymerichi*, Sardinia, DODERO, p. 53, Ann. Mus. Genova xli: n. spp.
- Centrophthalmosis* n. g. *C. inexpectus*, p. 376, *sulcatus*, *reitteri*, p. 377, n. spp., Africa, RAFFRAY, Ann. Soc. ent. France 1904.
- Centrophthalmus guineaensis*, *abyssinicus*, p. 373, Africa, *birmanus*, Burma, *sinensis*, Mong-po, p. 374, *papuanus*, Dorey, *angustipalpus*, Java, *bicarinatus*, Gaboon, p. 375, RAFFRAY, t. c. n. spp.

- Cercoceroides simplex, tuberculatus*, Brazil, RAFFRAY, p. 410, t. c. n. spp.
Cercoceropsis n. g. near *Cercoceroides*, *C. longipes* n. sp., Brazil, RAFFRAY, p. 387, t. c.
Cercocerulus n. g. for *Phalepsus hirsutus*, Schauf., RAFFRAY, p. 411, t. c.
Chenniopsis n. g. p. 338, *C. madecassa* n. sp., Madagascar, p. 339, RAFFRAY, t. c.
Claviger montandoni, Roumania, RAFFRAY, p. 457, t. c. n. sp.
Cliarthrus semirugosus, South Africa, RAFFRAY, p. 18, t. c. n. sp.
Comatopselaphus parcepunctatus, Sumatra, RAFFRAY, p. 120, t. c. n. sp.
Cryptorhinula xybaridoides, Brazil, RAFFRAY, p. 132, t. c. n. sp.
Ctenicellus n. g., p. 344, *C. major* n. sp., Australia, p. 345, RAFFRAY, t. c.
Ctenisomimus n. g. for *Sognorus oneili*, RAFFRAY, p. 341, t. c.
Ctenisophus validicornis, Sumatra, *bowringi*, Siam, p. 343, *irregularis*, Sumatra, p. 344, RAFFRAY, t. c. n. sp.
Ctenistes vaulogeri, Tunis, PIC, p. 89, Echange xx; *C. crassicornis*, Burma, RAFFRAY, p. 340, Ann. Soc. ent. France 1904, n. sp.
Curculionellus hirtus, Sumatra, RAFFRAY, p. 322, t. c. n. sp.
Cyathiger gracilis, p. 305, *patruelis*, *nodicornis*, p. 306, *truncatus*, p. 307, Sumatra, RAFFRAY, t. c. n. spp.
Cyrtoplectus subg. n. for *Euplectus sulciventris*, NORMAND, p. 200, Bull. Soc. ent. France 1904.
Dalmodes gracilipes, Brazil, RAFFRAY, p. 270, Ann. Soc. ent. France 1904, n. spp.
Decarthron bicolor, Chile, *hetschkoi*, Brazil, p. 187, *sulcipes*, Bolivia, *tritolum*, Brazil, p. 188, *arthriticum*, Mexico, *insulare*, Grenada, p. 189, *quadriceps*, Mexico, *planiceps*, Colombia, p. 190, *schmitti*, Mexico, p. 191, *spinosum*, Grenada, *vulneratum*, Mexico, p. 192, *brasiliunum*, *minutum*, p. 193, Brazil, *tomentosum*, Colombia, *schaufussi*, Amazons, *planifrons*, Mexico, p. 194, *longicorne*, Amazons, *frontale*, Colombia, p. 195, RAFFRAY, t. c. n. spp.
Desimia caviceps, S. Africa, RAFFRAY, p. 346, t. c.; *D. ferruginea*, Tunis, NORMAND, p. 219, Abeille xxx : n. spp.
Diaposis n. g. for *Batrissus carinicolis* Raffr., RAFFRAY, p. 38, Ann. Soc. ent. France 1904.
Diagnosis n. g. near *Batrissoschema*, p. 14, *D. granulosa* n. sp., Sumatra, p. 15, RAFFRAY, t. c.
Didymoprora semipunctata, Queensland, RAFFRAY, p. 384, t. c. n. sp.
Drasinus n. g. near *Decarthron*, *D. binodulus* n. sp., Mexico, RAFFRAY, p. 148, t. c.
Ectopocerus n. g. for *Decarthron verticicornis* Reitt., RAFFRAY, p. 149, t. c.
Eleusomatus, p. 638, op. cit. 1904, the following is called *Eleusomatus*.
Eleusoptamus n. g. for *Euplectus allocephalus*, Broun, RAFFRAY, p. 548, op. cit. 1903.
Enoptostomus crassicornis, Sumatra, RAFFRAY, p. 347, op. cit. 1904, n. sp.
Ephimia subnitida, Grenada, RAFFRAY, p. 312, t. c. n. sp.
Ephymata n. g. for *Bryaxis mucronata* Raffr., RAFFRAY, p. 149, t. c.
Eremomus n. g. near *Brachygluta*, *E. obesus*, Bolivia, p. 177, *crassicornis*, Para, p. 178, n. spp., RAFFRAY, t. c.
Euphalepsus tricarinatus, p. 61, *fasciculatus*, p. 62, Brazil, *dentipes*, N. America, p. 63, *tibialis*, Amazons, p. 64, RAFFRAY, t. c.
Eupines minima, Australia, p. 123, *E. (Bryaxis) longiceps*, New Zealand, p. 124, RAFFRAY, t. c. n. spp.
Euplectus, cf. *Cyrtoplectus*.
E. crassus, pici, p. 210 with var. *scillarum*, p. 211, *fedjensis*, p. 212, Tunis, NORMAND, Abeille xxx; *E. caviceps*, p. 48, *sulciceps*, p. 49, New Zealand, BROUN, Ann. Nat. Hist. xiv; *E. schmitti*, p. 540, *infossus*, p. 541, N. America, *exiguus*, *illepidus*, Antilles, p. 542, RAFFRAY, Ann. Soc. ent. France 1903 : n. spp.

- Eupsenius gracilis*, Antilles, RAFFRAY, p. 197, op. cit. 1904, **n. sp.**
Eurhexius sexpunctatus, *longicornis*, p. 589, *megacephalus*, p. 590, *quadri-foveatus*, *laevis*, *subacuminatus*, p. 591, *octopunctatus*, *reitteri*, p. 592, *bicolor*, p. 593, Brazil, RAFFRAY, op. cit. 1903, **n. spp.**
Euteleia **n. g.** near *Decarthron*, *E. lewisi*, p. 183, *trifoveata*, Brazil, *nodosa*, Mexico, p. 184, **n. spp.**, RAFFRAY, op. cit. 1904.
Eutyphlus schmitti, Pennsylvania, RAFFRAY, p. 546, op. cit. 1903, **n. sp.**
Exallus **n. g.** for part of *Ovarthrius*, RAFFRAY, p. 18, op. cit. 1904.
Filiger validus, p. 310, *opacus*, p. 311, Sumatra, RAFFRAY, t. c. **n. spp.**
Fustiger smithi, St. Vincent, RAFFRAY, p. 455, t. c. **n. sp.**
Fustigeropsis simplex, S. Africa, RAFFRAY, p. 455, t. c. **n. sp.**
Globa laevis, Bolivia, RAFFRAY, p. 122, t. c. **n. sp.**
Golasa **n. g.** p. 494, for *Sagola microcephala* Reitt., RAFFRAY, op. cit. 1903.
Hamotoides nigropilosus, p. 407, Pará, *hirtus*, p. 408, Grenada, RAFFRAY, op. cit. 1904, **n. spp.**
Hamotus sternalis, p. 389, *boliviensis*, p. 390, Bolivia, *globulifer*, Brazil, p. 392, *tibialis*, Mexico, *punctipennis*, Colombia, p. 393, *vesiculifer*, Venezuela, p. 394, *bulbifer*, Colombia, p. 395, *latus*, Paraguay, p. 397, *cavicornis*, Guatemala, *rugosus*, p. 398, *bicolor*, *fauveli*, p. 399, *sulci-palpus*, Bolivia, *grouvellei*, p. 400, *simplex*, p. 401, Brazil, *soror*, Venezuela, p. 403, *decipiens*, *longepilosus*, Colombia, p. 404, *longiceps*, Brazil, p. 405, RAFFRAY, t. c. **n. spp.**
Hapochreus **n. g.** near *Batrisoschema*, p. 13, *H. granosus* **n. sp.**, Sumatra, p. 14, RAFFRAY, t. c.
Harmomima **n. g.** near *Batrybraxis*, *H. grandiceps*, p. 269, *impressicollis*, p. 270, Bolivia, **n. spp.**, RAFFRAY, t. c.
Itamus **n. g.** near *Decarthron*, *I. laticeps* **n. sp.**, Brazil, RAFFRAY, p. 196, t. c.
Iteticus **n. g.** for part of *Batrisodes* etc., RAFFRAY, p. 19, t. c.
Jubus brevis, Bolivia, *gracilicornis*, Mexico, p. 510, *clavatus*, Grenada, p. 511, RAFFRAY, op. cit. 1903, **n. spp.**
Labomimus harmandi, India, RAFFRAY, p. 382, op. cit. 1904, **n. sp.**
Macharites glabratus, found with *Ponera*, CHITTY, p. xl, P. ent. Soc. London 1904.
Macropectus tasmanicus, Tasmania, RAFFRAY, p. 544, Ann. Soc. ent. France 1903, **n. sp.**
Melba grenadensis, Antilles, p. 535, *dentipes*, N. America, p. 536, *quadri-foveata*, St. Thomas, p. 537, RAFFRAY, t. c. **n. spp.**
Nenemeca **n. g.** near *Batrisus*, *N. bidentata* **n. sp.**, Sumatra, RAFFRAY, p. 37, op. cit. 1904.
Methorius **n. g.** p. 537 for *Periplectus bicolor*, RAFFRAY, op. cit. 1903.
Metopias carinipes, Bolivia, RAFFRAY, p. 106, op. cit. 1904, **n. sp.**
Mina nasuta, Sumatra, RAFFRAY, p. 59, t. c. **n. sp.**
Mirus lavagnei, Montpellier, DODERO, p. 40, Bull. Soc. ent. France 1904, **n. sp.**
Mitona **n. g.** near *Xyburis*, *M. quadraticeps*, p. 129, *bisulciceps*, Bolivia, *mnizechi*, Colombia, p. 130, *nigra*, Venezuela, p. 131, **n. spp.**, RAFFRAY, Ann. Soc. ent. France 1904.
Nodulina **n. g.** for *Bryaxis convexa* Schauf., RAFFRAY, p. 153, t. c.
Odontalgus gracilis, *validus*, Sumatra, RAFFRAY, p. 348, t. c. **n. spp.**
Omotimus **n. g.** for *Trimodytes sulcifrons*, RAFFRAY, p. 534, op. cit. 1903.
Ophelius **n. g.** near *Butrisopsis*, *O. simplex* **n. sp.**, Sumatra, RAFFRAY, p. 36, op. cit. 1904.
Patreus **n. g.** near *Sagola*, for *P. lewisi* **n. sp.**, New Zealand, BROWN, p. 47, Ann. Nat. Hist. xiv.
Phalepus vulgaris, *cavicornis*, S. America, RAFFRAY, p. 416, Ann. Soc. ent. France 1904, **n. spp.**

- Phamismus velutinus*, Bolivia, RAFFRAY, p. 512, op. cit. 1903, **n. sp.**
Phoberus n. g. near *Reichenbachia*, *P. armatus n. sp.*, Bolivia, RAFFRAY, p. 176, op. cit. 1904.
Prosgola n. g. p. 494, for *Sagola elfrida* Reitt., RAFFRAY, op. cit. 1903.
Pselaphus globiventris, Sicily, REITTER, p. 46, Wien. ent. Zeit. xxiii; *P. pubescens*, Annam, *vestitus*, Sumatra, *squamosus*, Cape Town, RAFFRAY, p. 321, Ann. Soc. ent. France 1904: **n. spp.**
Pselaptus politissimus, Brazil, *sternalis*, Grenada, RAFFRAY, p. 128, op. cit. 1905, **n. spp.**
Pseudohamotus planiceps, Brazil, RAFFRAY, p. 409, op. cit. 1904, **n. sp.**
Pseudophanias elegans, *robustus*, p. 413, Sumatra, *punctatus*, Singapore, p. 414, *puberulus*, Penang, *clavatus*, Sumatra, p. 415, RAFFRAY, t. c. **n. spp.**
Pyxidicerus lævipennis, Sumatra, *laticollis*, Singapore, RAFFRAY, p. 501, op. cit. 1903.
Radamellus n. g. for *Radama spinipennis*, RAFFRAY, p. 456, op. cit. 1904.
Raffrayia opaca, S. Africa, RAFFRAY, p. 595, op. cit. 1903, **n. sp.**
Reichenbachia addahensis, W. Africa, *nava*, p. 156, *breviventris*, Sumatra, *infelix*, W. Africa, p. 157, *bengalensis*, India, *grouvellei*, Mexico, p. 158, *nitella*, Sumatra, *boliviensis*, Yuracaris, p. 159, *pygidialis*, Missouri, *cicatricosa*, Sumatra, p. 160, *muscorum*, Penang, *curvipes*, Brazil, p. 161, *arabica*, Hedjaz, *irrita*, p. 162, *luteola*, p. 163, *chevolati*, *pilosa*, p. 164, *illepida*, Brazil, *fasciculata*, p. 165, *compressipes*, p. 166, Sumatra, *orientalis*, W. Asia, p. 167, *maroccana*, Morocco, *grenadensis*, p. 168, *vincentiana*, Antilles, *cultrata*, Sumatra, p. 169, *falsa*, Yucatan, p. 170, *globulosa*, Brazil, p. 171, *chiricahuensis*, Arizona, p. 172, *mexicana*, Mexico, *oberthuri*, Honda, p. 173, *appendiculata*, Mexico, p. 174, *obnubila*, Yucatan, *immodica*, Colombia, p. 175, RAFFRAY, op. cit. 1904; *R. infossa*, Sumatra, RAFFRAY, p. 635, t. c.: **n. sp.**
Rybaxis villosa, Tonkin, *convexa*, Sumatra, p. 181, *bicarinata*, Queensland, p. 182, RAFFRAY, t. c. **n. spp.**
Salagosa n. g. p. 494, for *Sagola brevipennis* Reitt., RAFFRAY, op. cit. 1903.
Sathytes gracilis, Sumatra, RAFFRAY, p. 65, op. cit. 1904, **n. sp.**
Scalenarthrus subcarinatus, Yucatan, *schaufussi*, Brazil, p. 125, *simplex*, Bolivia, *obliquus*, Mexico, p. 126, *clavatus*, *pectinicornis*, Antilles, p. 127, RAFFRAY, t. c. **n. spp.**
Schaufussia nasuta, S. Australia, RAFFRAY, p. 385, t. c. **n. sp.**
Strombopsis n. g. near *Xybarida*, p. 133, *X. breviventris n. sp.*, Brazil, RAFFRAY, t. c.
Subulipalpus myrmecophilus, Hong-Kong, RAFFRAY, p. 383, t. c. **n. sp.**
Tanypleurus megacephalus, Sumatra, RAFFRAY, p. 271, t. c. **n. sp.**
Thesiastes liliputanus, Granada, RAFFRAY, p. 543, op. cit. 1903, **n. sp.**
Thysdarius n. n. for *Thysdrus* Fairm., FAIRMAIRE, p. 117, Bull. Soc. ent. France 1904.
Tmesiphorus punctatus, Assinia, p. 378, *arrowi*, Adelaide Riv., p. 379, *bispina*, *squamosus*, p. 380, *aspericollis*, p. 381, Sumatra, RAFFRAY, Ann. Soc. ent. France 1904, **n. spp.**
Trimium longiventre, Transcaucasus, RAFFRAY, p. 534, op. cit. 1903, **n. sp.**
Triomicrus cavernosus, *humilis*, China, RAFFRAY, p. 147, op. cit. 1904, **n. spp.**
Tychus, study, synonymical and varietal, PEYERIMHOFF, Abeille xxx, pp. 169-179, *T. bryaxioides* var. *n. raffrayi*, p. 173; *T. niger* and *bryaxioides*, variation, *bryaxioides* var. *n. poupilieri*, RAFFRAY, pp. 265-267, Ann. Soc. ent. France 1904.
T. bispina, Tangier, p. 267, *sternalis*, Pennsylvania, p. 268, RAFFRAY, t. c. **n. spp.**
Tyraphus vestitus, Sumatra, RAFFRAY, p. 636, t. c. **n. sp.**
Tyrus tillyi, Carinthia, SCHATZMAYR, p. 213, Munchen. Kol. Zeitschr. ii, **n. sp.**

- Xybarida punctulum*, Brazil, RAFFRAY, p. 133, Ann. Soc. ent. France 1904, n. sp.
Xybaris quadraticeps, p. 131, *atomaria*, p. 132, Brazil, RAFFRAY, t. c. n. spp.
Zethopsus puncticeps, Sumatra, RAFFRAY, p. 502, op. cit. 1903, n. spp.

PAUSSIDÆ.

[Cf. PÉRINGUEY (1028), WASMANN (1481).]

- Pausside*, remarks on phylogeny and biology, also new varr. besides the spp. mentioned below, WASMANN, Notes Leyden Mus. xxv, pp. 1-82.
Hylotorus seabakuanus, Rhodesia, PÉRINGUEY, p. 205, Ann. S. African Mus. iii, n. sp.
Paussus faveri, relations with ants, NORMAND, p. 79, Echange xx.
P. cerambyx, Congo, p. 51, pl. iv, f. 3, *bicornis*, Cameroons, f. 2, p. 52, *semicucullatus* (Brauns), Port Elizabeth, p. 53, *cardoni*, p. 57, pl. v, f. 6, *asmuthi*, p. 58, pl. vi, f. 4; *seriesetosus*, f. 3, p. 59, *quadratidens*, p. 60, *aureofimbriatus*, p. 61, pl. vi, f. 5, India, *spiniceps*, p. 63, f. 6, Sierra Leone, *pandamanus*, f. 6, p. 64, *nigrita*, p. 65, Java, WASMANN, Notes Leyden Mus. xxv, n. spp.
Platyrhopalus cardoni, India, p. 19, *paussoides*, Bootang, p. 20, pl. iii, f. 3, WASMANN, t. c. n. spp.
Pleuropterus oberthuri, p. 9, *brevicornis*, p. 10, Africa, WASMANN, t. c. n. spp.

SCYDMÆNIDÆ.

[Cf. FAUCONNET & VITURAT (480), REITTER (1151, 1152).]

- Euconnus solarii*, Valle Lucano, REITTER, p. 152, Wien. ent. Zeit. xxiii, n. sp.
Neuraphes bescidicus, Silesia, REITTER, p. 147, t. c. n. sp.
Stenichnus pilosissimus, Valle Lucano, REITTER, p. 151, t. c. n. sp.

SILPHIDÆ.

[Cf. ABEILLE (4), CHOBOUT (271), CSIKI (328), DODERO (397), FLEISCHER (513), MAYET (926), MÜLLER (970, 971), PEYERIMHOFF (1041, 1042), POPPIUS (1094), PORTEVIN (1100), REITTER (1142, 1151, 1152, 1155), WASMANN (1482), ZOUFAL (1549).]

- REITTER figures Bosnian and Herzegovinian Cave *Silphide*, pl. 1, p. 146, Wien. ent. Zeit. xxiii.
Agathidium levigatum, Valle Lucano, REITTER, p. 154, t. c. n. sp.
Anemadus leonhardi, Herzegovina, REITTER, p. 154, t. c. n. sp.
Antroherpon loreki=(*kraussi* Müll.), REITTER, p. 84, t. c.
A. loreki, cavern in Herzegovina, ZOUFAL, p. 20, Wien. ent. Zeit. xxiii; *A. kraussi*, Herzegovina, MÜLLER, p. 38, Munchen. Kol. Zeitschr. ii, n. spp.
Apholeuonus nudus var. n. *longicollis*, REITTER, p. 255, Wien. ent. Zeit. xxiii.
A. (Haplotropidius) subg. n. p. 89, *pubescens*, p. 78, pl. i, f. 1, *taxi*, p. 83, f. 2, Dalmatian caverns, MÜLLER, SB. Ak. Wien cxii, Abt. i, n. spp.
Bathyscia destefanii, valid, list of Italian *B.*, DODERO, pp. 121-123, Natural. Sicil. xvii; *B. champsauri*, p. 215, *foveicollis*, p. 216, subsp. n., PEYERIMHOFF, Bull. Soc. ent. France 1904; *B. neumanni*, characters, REITTER, p. 260, Wien. ent. Zeit. xxiii.
B. nemausica, Nîmes, CHOBOUT, p. 76, Bull. Soc. Nîmes xxxi; *B. jeanneli*, p. 242, *elguæ*, p. 243, Basses Pyrénées, ABEILLE, Bull. Soc. ent. France 1904; *B. (Aphaobius) fubianii*, Venetia, p. 55, *raveli*, Capri, p. 57, *lostiae*, Sardinia, p. 58, DODERO, Ann. Mus. Genova xli; *B. serbica*,

- Servia, MÜLLER, p. 41, Munchen. Kol. Zeitschr. ii; *B. (Aphaobius) eurycnemis*, cavern Herzegowina, REITTER, p. 26, Wien. ent. Zeit. xxiii : **n. spp.**
- Blattodromus* **subgen. n.**, cf. *Pholeuonopsis*.
- Choleva pallida*, E. Siberia, POPPIUS, p. 2, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Delios* **n. g.** *Liadini*, *D. bouvieri* **n. sp.**, Darjeeling, PORTEVIN, p. 335, Bull. Mus. Paris ix.
- Diaprysius mazaurici*, cavern, Gard, MAYET, p. 31, Bull. Soc. Nimes xxxi; *D. serullazi*, Ardèche. PEYERIMHOFF, p. 185, Bull. Soc. ent. France 1904 : **n. spp.**
- Dissochætus geayi*, French Guiana, PORTEVIN, p. 329, Bull. Mus. Paris ix, **n. sp.**
- Eusilpha hypocrita*, Mou-pin, PORTEVIN, p. 332, t. c. **n. sp.**
- Hadrambe* Thoms. is syn. of *Ecanus* Steph., BEDEL, p. 235, Abeille xxx.
- Haplotropidius* **subgen. n.**, cf. *Apholeuon*.
- Liodes*, habits, with larvæ noticed, FLEISCHER, pp. 251-254, Wien. ent. Zeit. xxiii, *L. curvipes* (= *macropus* Rye) characters, var. *n. ruficornis*, FLEISCHER, p. 162, t. c.; *L. ovalis*, *nigricollis*, nov., FLEISCHER, p. 166, t. c.; *L. scita*, cf. *Trichosphærule*.
- L. chaffanjonii*, Mongolia, *contracta*, Darjeeling, PORTEVIN, p. 335, Bull. Mus. Paris ix, **n. spp.**
- Loricaster cribripennis*, France, REITTER, p. 147, Wien. ent. Zeit. xxiii, **n. sp.**
- Necrophorus vespilloides* var. *n. lateralis*, PORTEVIN, p. 330, Bull. Mus. Paris ix.
- N. quadraticollis*, Mou-pin, id., l. c. **n. sp.**
- Philas* **n. g.** for *Silpha truncata* Say, PORTEVIN, p. 331, t. c.
- Pholeuon* (*Parapholeuon*) *hungaricum*, Szohodol, CSIKI, p. 565, Ann. Mus. Hungar. ii, **n. sp.**
- Pholeuonopsis* (*Blattodromus* subg. *n.*) *herculeana*, Bosnia, REITTER, p. 153, Wien. ent. Zeit. xxiii, **n. sp.**
- Pteroloma harmandi*, Darjeeling, PORTEVIN, p. 334, Bull. Mus. Paris ix, **n. sp.**
- Ptomaphagus bicolor*, Darjeeling, PORTEVIN, p. 329, t. c. **n. sp.**
- Scotocryptus*, notes, larva, WASMANN, Rev. Mus. Paulista vi, pp. 483-487.
- Silpha inæqualis* var. *n. rugulosa*, PORTEVIN, p. 333, Bull. Mus. Paris ix.
- Silphosoma* **n. g.** for *Silpha metallescens* Fairm., PORTEVIN, p. 333, t. c.
- Thanatophilus thoracicus* var. *n. davidi*, PORTEVIN, p. 331, t. c.
- Trichosphærule* subg. *n.* of *Liodes* for *scita* Er., FLEISCHER, p. 261, Wien. ent. Zeit. xxiii.

TRICHOPTERYGIDÆ.

- Ptenidium lavipenne*, East Pyrenees, ABEILLE, p. 100, Miscell. Ent. xii, **n. sp.**

SCAPHIDIIDÆ.

- Scaphidium matthewsi* **n. n.** for *unicolor* Matth., CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- Scaphosoma reitteri* **n. n.** for *læve* Guillb., CSIKI, p. 85, t. c.

HISTERIDÆ.

- [Cf. DAVIS (352), LEWIS (880), REITTER (1144, 1152), SCHAEFFER (1220).]
Hister attacking caterpillars, DAVIS (352).

- Acritus nigricornis*, sexes, MÜLLER, p. 172, Wien. ent. Zeit. xxiii; *A. seminulum* and *nigricornis* as sexes, REITTER, p. 36, t. c.; *A. nigricornis* and *seminulum*, correction, GERHARDT, p. 368, Deutsche ent. Zeitschr. 1904.
- A. italicus*, Valle Lucano, REITTER, p. 155, Wien. ent. Zeit. xxiii, **n. sp.**
- Enicosoma* **n. g.** for *E. vespertinum* **n. sp.**, Brazil, LEWIS, p. 149, pl. vi, f. 5, Ann. Nat. Hist. xiv, **n. sp.**
- Eutidium lepidum*, Brazil, LEWIS, p. 138, t. c. **n. sp.**
- Gnathoncus*, synonymy, *G. schmidti*, established, REITTER, p. 35, Wien. ent. Zeit. xxiii.
- Hister pachysoma*, characters, LEWIS, p. 146, Ann. Nat. Hist. xiv.
- H. belli*, India, p. 146, *walkeri*, Australia, p. 147, LEWIS, t. c. **n. spp.**
- Hololepta dux*, Camerouns, LEWIS, p. 138, t. c. **n. sp.**
- Lioderma intersectum*, Peru, LEWIS, p. 139, t. c. **n. sp.**
- Macrolister* **n. g.** for *Hister gigas* etc., LEWIS, p. 145, t. c.
- Niponius canalicollis*, f. 1, *parvulus*, f. 2, *andrewesi*, f. 3, pl. vi, LEWIS, t. c.
- N. straticeps*, Borneo, p. 137, pl. vi, f. 4, id. t. c. **n. sp.**
- Omalodes mestino*, Peru, LEWIS, p. 144, **n. sp.**
- Orectoscelis humeralis*, pl. vi, fig. 6, LEWIS, t. c.
- Pachycrærus cylindricus*, description, LEWIS, p. 148, t. c.
- Pachylister* **n. g.** for *Hister caffer* etc., LEWIS, p. 145, t. c.
- Pachylomalus andrewesi*, India, LEWIS, p. 147, t. c. **n. sp.**
- Placodes brauni*, S. Africa, LEWIS, p. 142, t. c. **n. sp.**
- Plæsius mouhoti*, *planulus*, *lævis*, redescribed, LEWIS, pp. 140, 141, t. c.
- Platylister sororius*, India, LEWIS, p. 142, t. c. **n. sp.**
- Platysoma capense* is *henningi* Sturm, *sculptum* Fähr, *punctulatum* Lew., LEWIS, p. 144, t. c.
- P. rupestriatum*, Java, LEWIS, p. 143, t. c. **n. sp.**
- Probolosternus termitophilus*, S. Africa, LEWIS, p. 148, t. c. **n. sp.**
- Saprinus politus* Brahm=(*pulcherrimus* Web.), BEDEL, p. 236, Abeille xxx;
- S. lateristrius* var. *n. laterimargo*, REITTER, p. 32, Wien. ent. Zeit. xxiii.
- S. mimulus*, Astrakhan, p. 29, *syphax*, Algiers, p. 30, *duriculus*, Transcaspian, p. 31, *refector*, Samarkand, p. 32, *netuschili*, Mongolia, *pseudolautus*, Transcaucasus, p. 33, *pseudognathoncus*, W. Caucasus, p. 34, REITTER, t. c.: *S. dichrous*, *flavopictus*, S. America, LEWIS, p. 150, Ann. Nat. Hist. xiv : **n. spp.**
- Stenotrophis cavifrons*, pl. vi, fig. 7, LEWIS, t. c.
- Teinotarsus latipes*, Old Calabar, LEWIS, p. 145, t. c. **n. sp.**
- Teretriosoma sexualis*, Texas, SCHAEFFER, p. 203, J. N. York Ent. Soc. xii, **n. sp.**

NITIDULIDÆ.

[Cf. GROUVELLE (639), POPPIUS (1094), SCHAEFFER (1220).]

- Camptodes texanus*, Brownsville, SCHAEFFER, p. 203, J. N. York Ent. Soc. xii, **n. sp.**
- Epuræa opacula*, E. Siberia, POPPIUS, p. 3, Ofv. Finska Forh. xlv, No. 16, p. 5, **n. sp.**
- Glischrochilus olivieri*, synonymy, BEDEL, p. 236, Abeille 1904.
- Meligethes atomus*, Congo, GROUVELLE, p. 181, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Pocadius ferrugineus* and *striatus*, synonymy, BEDEL, p. 236, Abeille 1904.

COLYDIIDÆ.

[Cf. GROUVELLE (639).]

- Caprodes ater*, Congo, GROUVELLE, p. 181, Ann. Soc. ent. Belgique xlviii, **n. sp.**

- Cerylon ovale*, Gaboon, GROUVELLE, p. 182, t. c. **n. sp.**
Endophylæus markovichianus Pill. (= *spinosulus* Latr.), BEDEL, p. 236, Abeille xxx.
Minthea rugicollis Walk. (as *Ditoma*) = (*similatra* Pasc. = *Eulachus hispidus* Blackb. = *Lycopholis foveicollis* Reitt.), ARROW, pp. 35, 36, Ent. Mag. xl.

RHYSODIDÆ.

- Rhysodes ichthyocephalus, abbreviatus*, p. 79, *mirabilis*, pl. iv, fig. 7, p. 80, Queensland, *trichostemus*, p. 81, Victoria and Tasmania, *planatus*, Victoria, p. 82, LEA, P. Linn. Soc. N. S. Wales xxix, **n. spp.**

CUCUJIDÆ.

- [Cf. GROUVELLE (639), LEA (864), SCHAEFFER (1220).]
Dryocora walkeri, Tasmania, LEA, p. 87, pl. iv, fig. 5, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
Læmophylæus diemenensis ♀, pl. iv, fig. 14, *frenchi*, fig. 4; LEA, p. 87, t. c.
L. notabilis, Congo, GROUVELLE, p. 183, Ann. Soc. ent. Belgique xlviii;
L. subopacus, W. Australia, p. 82, *ubiquitosus*, Tasmania, p. 83, *pilosus*, p. 84, *testaceo-rufus*, W. Australia, *eucalypti*, Tasmania, p. 85, *pallidus*, Australia, p. 86, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
Læmotmetus rhizophagoides Walk. (as *Trogossita*) = (*ferrugineus* Gerst. = *Oryzæcus cathartoides* Reitt. = *Asana rhizophagoides* Oll.), ARROW, p. 36, Ent. Mag. xl.
Silvanus proximus, p. 183, *frater*, p. 184, West Africa, GROUVELLE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Platysus integricollis, larva, LEA, p. 88, pl. iv, fig. 6, P. Linn. Soc. N. S. Wales xxix.
Rhinomalus texanus, Brownsville, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii : **n. sp.**

CRYPTOPHAGIDÆ.

- [Cf. GABRIEL (577), SCHAEFFER (1220).]
Atomaria; mode of distinguishing species, table, GABRIEL, Zeitschr. Ent. Breslau xxix, pp. 85–89; *A. proluxa* and *pulchra*, characters, GERHARDT, p. 83, Zeitschr. Ent. Breslau xxix.
Loberus ornatus, Texas, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii : **n. sp.**
Tomarus chamæropis, Texas, SCHAEFFER, p. 202, t. c. **n. sp.**

LATHRIDIIDÆ.

- [Cf. POPPIUS (1095), REITTER (1152), SEMENOW (1278).]
Corticaria solarii, Valle Lucano, REITTER, p. 156, Wien. ent. Zeit. xxiii : *C. dentiventris*, E. Siberia, POPPIUS, p. 84, Medd. Soc. Faun. Fenn. 1902/03 : **n. spp.**
Enicmus minutus and *anthracinus*, distinguished, REITTER, pp. 43–45, 80, Wien. ent. Zeit. xxiii.
Lar subg. **n.** of *Lathridius* for *L. bergrothi*, SEMENOW, p. 314, Rev. Russe Ent. 1904.
Lathridius subbrevis Motsch., characters, POPPIUS, p. 89, Medd. Soc. Faun. Fenn. 1902/03.
Lathridius semenowi, p. 87, *lenensis*, p. 91, East Siberia, POPPIUS, t. c.; *L. poppiusi*, E. Siberia, SEMENOW, p. 289, Rev. Russe Ent. 1904 : **n. spp.**

MYCETOPHAGIDÆ.

[Cf. GROUVELLE (639), REITTER (1153).]

Lithargus trimaculatus, p. 184, *variegatus*, p. 185, Congo, GROUVELLE, Ann. Soc. ent. Belgique xlviii, n. spp.*Mycetophagus irroratus* = (*tschitscherini* Reitt.), SEMENOW, p. 305, Rev. Russe Ent. 1904; *M. decempunctatus* var. n. *syriacus*, REITTER, p. 165, Wien. ent. Zeit. xxiii.*M. ramosus*, Caucasus, id. p. 166, t. c., n. sp.*Typhæa stercorea* L. 1758 = (*fumata* L. 1761), BEDEL, p. 235, Abeille xxx.

THORICTIDÆ.

Thorictus peyerimhoffi, Arabia, CHOBOUT, p. 243, Bull. Soc. ent. France 1904; *T. kaznakovi*, E. Buchar, SCHMIDT, p. 389, Annuaire Mus. St. Petersb. viii : n. spp.

DERMESTIDÆ.

[Cf. GANGLBAUER (580), PIC (1060, 1068, 1075).]

The European *Dermestidæ*, GANGLBAUER (580).*Attagenus biskrensis*, Algeria, PIC, p. 2, Echange 1904; *A. longipennis*, Kashgar, PIC, p. 33, t. c. : n. spp.*Dermestes erichsoni* n. n. for *tessellatus* Er., GANGLBAUER, p. 16, Käf. Mitteleur. iv.*Entomotrogus* n. g. for *Trogoderma megatomoides* Reitt., GANGLBAUER, p. 33, t. c.*Ignotus enigmaticus*, figure, Ent. News Philad. xv, p. 36.*Telopes brunnescens*, Amanus, PIC, p. 73, Echange xx, n. sp.

BYRRHIDÆ.

[Cf. BROUN (184), GANGLBAUER (580, 581), POPPIUS (1094).]

The *Byrrhidæ* of Europe, *Nosodendron*, a distinct family, *Nosodendridæ*, GANGLBAUER (580).*Byrrhus picipes judicarius* subsp. n., GANGLBAUER, p. 200, Munchen. Kol. Zeitschr. ii.*Curimus vestitus*, New Zealand, BROUN, p. 49, Ann. Nat. Hist. xiv, n. sp.*Simplocaria nivalis*, Tyrol, GANGLBAUER, p. 61, Käf. Mitteleur. iv; *S. nivalis*, Mt. Adamello, GANGLBAUER, p. 188, Munchen. Kol. Zeitschr. ii; *S. obscuripes*, E. Siberia, p. 5, *palmeni*, p. 6, *arctica*, p. 7, N. Russia, *nebulosa*, E. Siberia, p. 9, POPPIUS, Ofv. Finska Forh. xlv, No. 16, n. spp.

PARNIDÆ and HETEROCERIDÆ.

[Cf. GANGLBAUER (580, 582), GROUVELLE (640), SCHAEFFER (1220).]

Parnidæ to be called *Dryopidæ*, GANGLBAUER, p. 95, Käf. Mitteleur. iv.*Esolus solarii*, Genoa, GANGLBAUER, p. 116, t. c. n. sp.*Latelmis subopaca*, Val Pesio, GANGLBAUER, p. 118, t. c. n. sp.*Riolus apfelbecki*, Servia, GANGLBAUER, p. 354, Munchen. Kol. Zeitschr. ii, n. sp.

Throscinus schwarzi, Texas, SCHAEFFER, p. 204, J. N. York Ent. Soc. xii, n. sp.

Heterocerus (Littorinus) conjungens, Bangkok, GROUVELLE, p. 83, Mission Pavie iii, n. sp.

PASSALIDÆ.

[Cf. ARROW (38), SHARP (1284), ZANG (1545, 1546).]

The stridulation of *Passalidæ*, ARROW, pp. 731-734, Tr. ent. Soc. London 1904.

Stridulation, *Passalidæ*, *Proculus*, SHARP, p. 273, Ent. Mag. xl.

Aceraius; synonymy of the species, ZANG, p. 184, Tijdschr. Ent. xlvii.

Basilicanus convexifrons, Assam, ZANG, p. 698, Zool. Anz. xxvii, n. sp.

Ophrygonius n. g. near *Aceraius*, p. 697, *O. quadrifer* n. sp., Borneo, p. 699, ZANG, t. c.

Parapelopides n. g. near *Aceraius*, p. 694, *P. symmetricus* sp. n., p. 695, Borneo, ZANG, t. c.

Passalus distinctus, hab. America, Africa, Madagascar, ZANG, p. 181, Tijdschr. Ent. xlvii.

Pelops triumphator, Moluccas, ZANG, p. 182, t. c.

LUCANIDÆ.

[Cf. BOILEAU (141, 142, 143), BROUN (184), MÖLLENKAMP (954).]

The stridulation of *Lucanidæ*, ARROW, pp. 735-737, Tr. ent. Soc. London 1904.

Cyclommatus giraffa, montanellus, Kina Balu, MÖLLENKAMP, p. 372, Ins. Börse 1904, n. spp.

Dorcus (Eurytrachelus) brachycerus, Kashmir, BOILEAU, p. 27, Bull. Soc. ent. France 1904; *D. (Macrodorcus) rugosus*, Madura, BOILEAU, p. 39, t. c.: n. spp.

Eurytrachelus reichei and allies, MÖLLENKAMP, p. 402, Ins. Börse 1904.

Hemisodorcus axis, Sumatra, BOILEAU, p. 284, Naturaliste 1904, n. sp.

Hexarthrus deyrollei var. n. *rufipes*, BOILEAU, p. 277, t. c.

H. rollei; Kina Balu, MÖLLENKAMP, p. 403, Ins. Börse 1904, n. sp.

Homoderus? variegatus, Cameroons, BOILEAU, p. 277, Naturaliste 1904, n. sp.

Metopodontus felschei, W. Africa, MÖLLENKAMP, Ins. Börse 1904, p. 372; *M. mirabilis*, Usambara, *speciosus*, Nilgherry hills, BOILEAU, p. 278, Naturaliste 1904: n. spp.

Mitophyllus curvidens, New Zealand, BROUN, p. 50, Ann. Nat. Hist. xiv, n. sp.

Odontolabis waterstradti var. n. *kinabaluensis*, MÖLLENKAMP, Ins. Börse 1904, p. 341, *gazella telodont*, p. 348.

O. instabilis, Sumatra, p. 347, *imperialis*, Kina Balu, p. 348, MÖLLENKAMP, t. c. n. spp.

Prismognathus lucidus, Sikkim, BOILEAU, p. 278, Naturaliste 1904, n. sp.

Prosopocelus borealis, Assam, *specularis*, Tanganyika, p. 284, *mordax*, Burma, p. 285, BOILEAU, t. c.; *P. laticeps*, Himalaya, MÖLLENKAMP, p. 403, Ins. Börse 1904: n. spp.

Sphenognathus bellicosus, spinifer, S. America, BOILEAU, p. 284, Naturaliste 1904, n. spp.

SCARABÆIDÆ.

Stridulation of the imago, ARROW, Tr. ent. Soc. London 1904, pp. 709-750, pl. xxxvi.

Coprini.

[Cf. ARROW (38), BLACKBURN (132, 133, 134), BOUCOMONT (159), FAIRMAIRE (473), FELSCHÉ & D'ORBIGNY (494), FRANÇOIS (539), KOLBE (830), LEA (864), MAYET (925), OHAUS (992), D'ORBIGNY (996, 997, 998), PÉRINGUEY (1028), REITTER (1152, 1155).]

Notes on classification, specially of the *Geotrupid* series, ARROW, Tr. ent. Soc. London 1904, pp. 738-749.

Ægidinus n. g. *Æ. brasiliensis* n. sp., Ega, ARROW, p. 739, t. c.

Ægidium asperatum = (*colombianum* Bates), ARROW, p. 738, t. c.

Allotrypes subg. n. cf. *Geotrypes*.

Ammaecius felschianus, Algeria, REITTER, p. 255, Wien. ent. Zeit. xxiii, n. sp.

Anachalcos schulzi, E. Africa, KOLBE, p. 285, Berlin. ent. Zeitschr. xlix, n. sp.

Aphodiides, revision of Australian, BLACKBURN, pp. 149-181, P. Soc. Victoria xvii.

Aphodius rufus = (*moscoviticus* Sem.), SEMENOW, p. 37, Rev. Russe Ent. iv ; *A. breviciliatus* n. n. for *fimbriolatus* Reitt. nec. Mannh., POPPIUS, p. 366, Annuaire Mus. St. Petersb. viii ; *A. tunicatus* and *tomentosus*, SEMENOW, p. 305, Rev. Russe Ent. 1904.

A. (Esymus) cuniculorum, Nîmes, MAYET, p. 130, Bull. Soc. ent. France 1904 ; *A. andersoni*, p. 154, *suberosus*, p. 155, *insignior*, *baldiensis*, p. 156, Australia, BLACKBURN, P. Soc. Victoria xvii : n. spp.

Atænius moniliatus, p. 161, *koebeli*, p. 162, *imparilis*, p. 163, *sparsicollis*, *semicornutus*, p. 164, *twedensis*, p. 165, *nudus*, *gibbus*, p. 166, *macilentus*, *spissus*, p. 167, *consors*, p. 168, *coloratus*, p. 169, *walkeri*, p. 170, Australia, BLACKBURN, t. c. n. spp.

Aulonocnemis, SCHAUFUSS in *Ins. Börse* xix, p. 130 (not seen by Recorder), described 4 n. spp. of this genus.

Bolboceras, revision of Australian, BLACKBURN, P. Linn. Soc. N. S. Wales xxix, pp. 481-526.

B. macleayi, p. 500, *aratum*, p. 502, *leovilli*, p. 503, *tenax*, p. 507, *froggatti*, *truncatum*, p. 509, *clypeale*, p. 511, *basedowi*, p. 512, *mandibulare*, p. 513, *loweri*, p. 515, *nitidiceps*, p. 516, *lævipès*, p. 517, *subretusum*, p. 518, *nitens*, p. 519, *impressicollis*, p. 520, *obscurius*, p. 522, *curinatum*, p. 523, *pontiferum*, p. 525, Australia, BLACKBURN, t. c. n. spp.

Caccobius reticuliger, p. 255, *ganianensis*, p. 256, *longipennis*, p. 258, Africa, D'ORBIGNY, Ann. Mus. Genova xli ; *C. lateralis*, p. 417, *setifer*, p. 420, *callosifrons*, p. 421, *uniseries*, p. 423, W. Africa, D'ORBIGNY, t. c. : n. spp.

Copris camerunus, Africa, FELSCHÉ, p. 402, Arkiv Zool. i, n. sp.

Diastellopalpus albrechtianus, p. 290, *zeuneri*, p. 291, Cameroons, KOLBE, Berlin. ent. Zeitschr. xlix, n. spp.

Diastellopalpus orbignyi, Rhodesia, PÉRINGUEY, p. 224, Ann. S. African Mus. iii, n. sp.

Enoplotrupes ; revision, BOUCOMONT, pp. 210-214, with *sinensis* var. n. *crassicornis*, p. 212, BOUCOMONT, Rev. Ent. franc. 1904.

Epirrhinus flagellatus Fabr. = (*granulatus* Oliv.), BEDEL, p. 152, Abeille xxx.

Euparia olliffi, N. S. Wales, BLACKBURN, p. 171, P. Soc. Victoria xvii, n. sp.

Geotrupes ; table of subgenera, pp. 214-216, the Asiatic species, pp. 216-247,

- BOUCOMONT, Rev. Ent. franc. 1904 ; *Geotrupes* subg. n. *Allotrupes* for *G. mandibularis* Reitt., *G. distinctus*, characters, p. 65, *marginatus*, *intermedius*, *lævigatus*, synonymy, pp. 66, 67, FRANÇOIS, Bull. Soc. ent. France 1904 ; *G. niger* Marsh. = (*hypocrita* Serv.), BEDEL, p. 152, Abeille xxx, *G. (Thorectes) intermedius* Costa = (*lævigatus* Muls., Auctt., nec Fabr. = *cheroni* Croiss., id. l. c. ; *G. vernalis*, *stercorarius*, natural history, larvæ, OHAUS, pp. 103-108, Verh. Ver. Hamburg Unterh. xii.
- G. (Thorectes) punctato-lineatus*, S. E. Spain, FRANÇOIS, p. 141, Bull. Soc. ent. France 1904 ; *G. genestieri*, China, p. 220, *G. (Phelotrupes) vario-licollis*, Yunnan, *indicus*, N. India, p. 226, *immarginatus*, Se-tschuen, p. 231, *oberthuri*, *denticulatus*, p. 232, Siao-Lou, *G. (Odontotrupes* subg. n.), p. 236, *purpurei-punctatus*, p. 239, Se-tschuen, *taurus*, Centr. Asia, p. 240, *rufipes*, p. 242, *G. (Thorectes) armatas*, p. 246, Se-tschuen, BOUCOMONT, Rev. Ent. franc. 1904 : n. spp.
- Gymnopleurus*, *coriarius* Herbst. = (*flagellatus* Fabr., auctt.), BEDEL, p. 152, Abeille xxx.
- Heliocopris felschei*, E. Africa, KOLBE, p. 287, Berlin. ent. Zeitschr. xlix, n. sp.
- Hybosorides* ; the Australian, BLACKBURN, p. 180, P. Soc. Victoria xvii.
- Idiostoma* n. g. and n. subfam., p. 740, *I. rufum*, pl. xxxvi, fig. 1, *medon* n. spp., Patagonia, p. 741, ARROW, Tr. ent. Soc. London 1904.
- Lethrus (Ceratodirus)*, synonymy, REITTER, pp. 83, 84, Wien. ent. Zeit. xxiii ; *L. cephalotes*, combats, HAJOSS, pp. 8-10, Rov. Lapok xi.
- L. (Microlethrus) mithras*, Persia, REITTER, p. 256, Wien. ent. Zeit. xxiii, n. sp.
- Liatongus basicornis*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlviii, n. sp.
- Milichus rhodesianus*, S. Africa, PÉRINGUEY, p. 222, Ann. S. African Mus. iii, n. sp.
- Ochodeus maculipennis*, Java, pl. xxxvi, fig. 3, p. 743, *decoratus*, Penang, *campognathus*, fig. 2, Argentina, p. 744, *tridentatus*, Colombia, p. 745, ARROW, Tr. ent. Soc. London 1904, n. spp.
- Odontotrupes* subg. n. cf. *Geotrupes*.
- Oniticellus tibatensis*, Cameroons, KOLBE, p. 295, Berlin. ent. Zeitschr. xlix ; *O. sjostedti*, Cameroons, FELSCHÉ, p. 403, Arkiv Zool. i : n. spp.
- Onthophagus granulum* n. n. for *granum* d'Orb., *O. minutus* Hausm. = (*rusticus* Boh.), *setosus* = (*cretus* Pér.), *criniger* n. n. for *crinitus* d'Orb., p. 326, *fulleborni* Kolbe = (*hauseri* d'Orb.), *nyassicus* Kolbe = (*tridepressus* d'Orb.), p. 328, D'ORBIGNY, Ann. Mus. Genova xli ; *O. transcaspicus* Koen. = (*lineatus* Reitt.), REITTER, p. 25, Wien. ent. Zeit. xxiii.
- O. sjostedti*, Cameroons, D'ORBIGNY, p. 407, Arkiv Zool. i ; *O. ragazzii*, p. 261, *traversii*, p. 262, *ceremicans*, p. 264, *rufovirens*, p. 266, *calous*, p. 268, *impunctatus*, p. 271, *astigma*, p. 273, *flavibasis*, p. 274, with varr. *lineiger*, *mundatus*, p. 275, *stillatus*, p. 277, *choanicus*, p. 279, *lævis*, p. 281, *hirtipodex*, p. 283, *longiceps*, p. 285, *gestroi*, p. 287, *bituber*, p. 289, *carinifer*, p. 292, *concaivifrons*, p. 294, *scaberrimus*, p. 296, *unicarina*, p. 298, *investis*, p. 301, *piceiceps*, p. 304, *O. (Phalops) gallanus*, p. 309, *O. (Proagoderus) flexicollis*, p. 314, *triarmatus*, p. 320, Africa, D'ORBIGNY, Ann. Mus. Genova xli ; *O. nitidifrons*, p. 425, *inconstans*, p. 426, *miles*, p. 428, *nonstriatus*, p. 430, *bidentiger*, p. 433, *imbellis*, p. 434, *feai*, p. 436, *androgynus*, p. 439, *curtipilis*, p. 440, *mucronifer*, p. 442, *altidorsis*, p. 443, W. Africa, D'ORBIGNY, t. c. ; *O. cupreovirens*, p. 204, *adornatus*, p. 205, *arcifer*, p. 206, *anthracites*, p. 208, *bocandei*, p. 209, *minax*, p. 210, *duvivieri*, p. 211, *semiviridis*, p. 212, *tschoffeni*, p. 213, *flavorufus*, p. 215, *rufaticollis*,

- p. 216, *O. (Proag.) superbus*, p. 217, *prædentatus*, p. 218, *marginidens*, p. 220, Africa, D'ORBIGNY, Ann. Soc. ent. Belgique xlviii; *O. placens*, p. 219, *prætorius*, *decedens*, p. 220, *serenus*, p. 221, *rhynchophorus*, p. 222, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii; *O. carteri*, N.S.W., p. 147, *jungi*, S. Australia, p. 148, BLACKBURN, P. Soc. Victoria xvii : **n. spp.**
- Orphnus striatopunctatus*, Cameroons, FELSCH, p. 405, Arkiv Zool. i, **n. sp.**
- Panelus pygmaeus* MacL. = (*arthuri* Blackb.), LEA, p. 89, P. Linn. Soc. N. S. Wales xxix.
- Phycocnus*; tarsal structure, LEA, p. 90, t. c.
- P. sulcipennis*, Tasmania, id. p. 89, pl. iv, fig. 10, t. c. **n. sp.**
- Pleurophorus cæsus* = (*Ateneus rugiceps* Dury), BEDEL, p. 152, Abeille xxx.
- Psammodes australicus*, *obscurior*, Australia, BLACKBURN, p. 174, P. Soc. Victoria xvii, **n. spp.**
- Pseudopedaria* **n. g.** for *Pedaria grossa* Th., FELSCH, p. 400, Arkiv Zool. i.
- Rhyssenus*; synonymy of French species, CHABAUT, pp. 90–92, Bull. Soc. Nîmes xxxi.
- Saprosites mansuetus*, p. 175, *sternalis*, p. 176, Australia, BLACKBURN, P. Soc. Victoria xvii, **n. spp.**
- Saprus* **n. g.** near *Saprosites*, p. 178, *S. griffithi* **n. sp.**, Tasmania, p. 179, BLACKBURN, t. c.
- Thorectes nitidus*, characters, synonymy, *latus* = (*inflatus* Reitt.), *rugosicollis* = (*chalconotus* Cherr.), *semisericeus* = (*rugatulus* Jck.), *punctulatus* = (*brancziki* Apf.), id. p. 140, Bull. Soc. ent. France 1904.
- Thyreus* **n. g.** *Scatonomides*, p. 145, *T. kershawi* **n. sp.**, Victoria, p. 146, BLACKBURN, P. Soc. Victoria xvii.
- Tomogonus* subg. **n.** for *Caccobius castaneus*, D'ORBIGNY, p. 254, Ann. Mus. Genova xli.
- Trox*; Australian, synonymy, descriptions and tables, BLACKBURN, pp. 281–296, Tr. R. Soc. S. Austral. xxviii.
- T. demaisonii*, Asia Minor, REITTER, p. 156, Wien. ent. Zeit. xxiii; *T. nigrociliatus*, *raduloides*, p. 293, *annexus*, *massaicus*, *erlangeri*, *neumannii*, p. 293, *amitinus*, p. 294, Africa, KOLBE, Berlin. ent. Zeitschr. xlix; *T. tasmanicus*, Tasmania, *setosipennis*, p. 292, *eyrensis*, p. 293, *tricolor*, p. 295, *perhispidus*, p. 296, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxviii : **n. spp.**

Glaphyrini.

Synopsis of *Glaphyrus*, with identification of sexes and synonymy, CHAMPENOIS, Abeille xxx, pp. 137–151.

Hemiglaphyrus subg. **n.** p. 145, t. c., for *caucasicus* and *modestus*.

Melolonthini.

[Cf. BROWN (184), FAIRMAIRE (473, 474), PÉRINGUEY (1027), PIC (1068).]

The *Melolonthini* of S. Africa, systematic work, PÉRINGUEY, Tr. S. African Soc. xiii, pp. 1–293.

- Ablabera hottentota*, p. 79, *transvaalica*, *hirticollis*, p. 80, *capicola*, p. 81, *gravidula*, *gratula*, p. 82, *modesta*, *amena*, p. 83, *matabelena*, *hopeianu*, p. 84, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**
- Abladeroides ditissimus*, *pavoninus*, p. 62, *emeritus*, *letulus*, p. 64, *tardus*, *pauper*, *cognatus*, p. 66, *namaquanus*, p. 68, *quæsitus*, *decedens*, *ominosus*, p. 70, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Achelyna testacea*, Transvaal, PÉRINGUEY, p. 154, t. c. **n. sp.**

- Achloa delicatula*, *blandula*, *echinaticeps*, S. Africa, PÉRINGUEY, t. c. n. spp.
Egostetha simplex, p. 122, *brachiata*, p. 124, S. Africa, PÉRINGUEY, t. c. n. sp.
Aipeiopsis n. g. *Pachypodinae*, p. 160, *A. hirsuta* n. sp., Cape Colony, p. 161, PÉRINGUEY, t. c.
Allokotarsa n. g. near *Serica*, p. 36, *A. rotundicollis*, *clypeata* n. spp., S. Africa, p. 37, PÉRINGUEY, t. c.
Alogistotarsa n. g. *Sericinae*, p. 39, *A. straminea*, *ovampoana* n. spp., S. Africa, p. 40, PÉRINGUEY, t. c.
Amphimallus fuscus, metamorphosis, XAMBEU, p. 33, Naturaliste 1904; *A. pygialis*, habits etc., CLERMONT, pp. 104-106, Bull. Soc. ent. France 1904.
Anoxiella Reitt. = (*Schistocomete* Brenske), REITTER, p. 24, Wien. ent. Zeit. xxiii.
Apogonia improba, *mashona*, Rhodesia, PÉRINGUEY, p. 292, Tr. S. African Soc. xiii, n. sp.
Arraphytarsa n. g. *Sericinae*, *A. damarina* n. sp., S. Africa, PÉRINGUEY, p. 39, t. c.
Atys hybrida, p. 253, *insecta*, *inverta*, p. 254, *infans*, *straminea*, p. 256, *fallax*, *hypocrita*, p. 257, *simplex*, *humilis*, p. 258, S. Africa, PÉRINGUEY, t. c. n. spp.
Autoserica tessellata, p. 11, *annectens*, *A. (Lepiserica) partula*, p. 12, *proteana*, *australis*, p. 13, *A. rhodesiana*, *concordans*, p. 14, *distinguenda*, p. 15, S. Africa, PÉRINGUEY, t. c. n. spp.
Berigua n. g. *Schizonychides*, p. 185, *B. modesta* n. sp., Cape Colony, p. 186, PÉRINGUEY, t. c.
Brachylepis hauseri (Brenske), Zambesi, PÉRINGUEY, p. 288, n. sp.
Camenta transvaalensis, *lydenburgiana*, *capicola*, p. 95, *salisburyana*, *modesta*, p. 96, *coriacea*, p. 97, *simillima*, *inops*, p. 98, *tongaatsana*, p. 99, *pilosella*, *cafrina*, p. 100, *tumida*, *rhodesiana*, p. 101, *matabelena*, *zambesina*, p. 102, *mashona*, p. 103, S. Africa, PÉRINGUEY, t. c. n. spp.
Clitopa zambesina, p. 150, *precalva*, p. 151, S. Africa, PÉRINGUEY, t. c. n. spp.
Clypeasta n. n. for *Clypearia* Fairm. 1903, FAIRMAIRE, p. 226, Ann. Soc. ent. Belgique xlviii.
Coniopholis proxima, Transvaal, PÉRINGUEY, p. 273, Tr. S. African Soc. xiii, n. sp.
Cyclomera riklatlensis, Mozambique, PÉRINGUEY, p. 140, t. c. n. sp.
Diaphorosericus n. g. *D. mashona* n. sp., S. Africa, PÉRINGUEY, t. c.
Doleroserica n. g. p. 53, *D. gentilis*, *lætula*, p. 54, *festa*, *auspicata*, p. 55, n. spp., S. Africa, PÉRINGUEY, t. c.
Dolerotarsa n. g. near *Serica*, *D. emendatrix* n. sp., Transvaal, PÉRINGUEY, p. 38, t. c.
Empecta latipennis, Madagascar, FAIRMAIRE, p. 126, Ann. Soc. ent. Belgique xlviii, n. sp.
E. subcostata, Madagascar, FAIRMAIRE, t. c. n. sp.
Entyposis mendax, Rhodesia, PÉRINGUEY, p. 259, Tr. S. African Soc. xiii, n. sp.
Etiserica n. g. p. 23, *E. simplex* n. sp., Rhodesia, p. 24, PÉRINGUEY, t. c.
Eulepida tschindeana, Mozambique, PÉRINGUEY, p. 285, t. c. n. sp.
Euronycha n. g. near *Triodonta*, p. 30, *E. rhodesiana*, *sebakwana* n. spp., S. Africa, p. 32, PÉRINGUEY, t. c.
Gamka n. g. *Pachypodinae*, p. 159, *G. minuta* n. sp., Cape Colony, p. 160, PÉRINGUEY, t. c.
Glyptoglossa dispar, *namaquensis*, Cape Colony, PÉRINGUEY, t. c. n. spp.
Gryphonycha n. g. for *Puberula* Fähr., PÉRINGUEY, p. 30, t. c.
Holisonycha n. g. near *Schizonycha*, *H. mellila* n. sp., Cape Colony, PÉRINGUEY, p. 261, t. c.

- Hoplia* (*Decamera*) *hauseri*, Turkestan, REITTER, p. 157, Wien. ent. Zeit. xxiii, n. sp.
- Hoplolontha* n. g. *paviei* n. sp., Cambodia, FAIRMAIRE, p. 87, pl. ix bis, fig. 3, Mission Pavie iii.
- Hyboserica* n. g. *H. globuliformis*, Brenske and *Triodonta caffra*, PÉRINGUEY, p. 27, Tr. S. African Soc. xiii.
- Idocamenta* n. g. *I. jucunda* n. sp., S. Africa, p. 112, PÉRINGUEY, t. c.
- Ideserica* n. g. p. 32, *I. gratula* n. sp., S. Africa, p. 33, PÉRINGUEY, t. c.
- Kraseophylla* n. g. near *Macrophylla*, p. 134, *K. distincta* n. sp., Cape Colony, p. 135, PÉRINGUEY, t. c.
- Lachnosterna pinguis*, Cambodia, FAIRMAIRE, p. 88, Mission Pavie iii, n. sp.
- Leribe* n. g. p. 113, *L. vesca* n. sp., Natal, PÉRINGUEY, Tr. S. African Soc. xiii.
- Liparetrus tuberculatus*, emendation, LEA, p. 89, P. Linn. Soc. N. S. Wales xxix.
- Macrophylla natalensis*, p. 127, *capicola*, *nigricollis*, p. 128, *pubens*, p. 129, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, n. spp.
- Melolontha*, periodicity in Hungary, LÖSY, pp. 301, 304, Allatt. Kozl. Magyar Tars. iii.
- Microcamenta sebakuensis*, p. 87, *ovampoensis*, p. 88, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, n. spp.
- Mycernus* n. g. near *Psilodontia* for *M. elegans* n. sp., New Zealand, BROWN, p. 52, Ann. Nat. Hist. xiv.
- Neoserica transvaalensis*, S. Africa, PÉRINGUEY, p. 22, Tr. S. African Soc. xiii, n. sp.
- Oocamenta* n. g. p. 105, for *C. rufiventris* Burm. and *O. (Pseudocamenta* subg. n.) *transvaalia* sp. n., Transvaal, p. 107, PÉRINGUEY, t. c.
- Paracamenta* n. g. p. 108, for pt. of *Camenta*, with *P. conspicua*, p. 110, *suturalis*, *lydenburgiana*, p. 111, *calva*, p. 112, n. spp., S. Africa, PÉRINGUEY, t. c.
- Pasaphylla* n. g. p. 135, near *Macrophylla*, *P. libens* n. sp., Cape Colony, p. 136, PÉRINGUEY, t. c.
- Pegylidius* n. g. near *Hypopholis*, p. 279, *P. mashunus* n. sp., Rhodesia, p. 280, PÉRINGUEY, t. c.
- Pericamenta* n. g. *P. paupercula* n. sp., Cape Colony, PÉRINGUEY, p. 105, t. c.
- Periclitopa gariepina*, p. 143, *varicornis*, *dubiosula*, p. 144, S. Africa, PÉRINGUEY, t. c. n. spp.
- Phytolema herrmanni* and *Rivera plebeia*, injurious habits, larvæ, RIVERA, pp. 241 etc., Revist. chilena viii.
- Pleiohylla* n. g. near *Macrophylla*, p. 130, *P. vestita* n. sp., Cape Colony, p. 131, PÉRINGUEY, Tr. S. African Soc. xiii.
- Pleistophylla* n. g. p. 155, *P. singularis* n. sp., Transvaal, p. 156, PÉRINGUEY, t. c.
- Pleophylla tongaatsana*, Natal, PÉRINGUEY, p. 9, t. c.
- Prodontria* n. g. p. 53, for *P. lewisii* n. sp., New Zealand, p. 54, BROWN, Ann. Nat. Hist. xiv.
- Pseudachloa* n. g. p. 162, *P. leonina* n. sp., S. Africa, p. 163, PÉRINGUEY, Tr. S. African Soc. xiii.
- Pseudocamenta* subg. n. see *Oocamenta*.
- Pseustophylla* n. g. p. 157, *P. pretoriana* n. sp., Transvaal, p. 158, PÉRINGUEY, Tr. S. African Soc. xiii.
- Psilonychus deridens*, p. 267, *barkeri*, p. 268, *perturbator*, p. 269, S. Africa, PÉRINGUEY, t. c. n. spp.
- Schizonycha suginata*, p. 201, *boschimana*, p. 202, *idonea*, p. 205, *fartula*, p. 206, *infantilis*, p. 207, *transvaalica*, *parilis*, p. 208, *puerilis*, *disputabilis*, *mediastina*, p. 209, *inedita*, p. 210, *meracula*, *exasperans*, p. 211, *insuesa*, *gonagua*, p. 212, *exacerbens*, *profuga*, p. 213, *continens*,

- p. 214, *quæsitâ*, p. 216, *minima*, p. 218, *saga*, *durbana*, p. 219, *perplexabilis*, *dissimilis*, p. 220, *constrata*, p. 221, *plausibilis*, p. 223, *citima*, p. 225, *fraudulenta*, p. 226, *dissensa*, p. 227, *infarsa*, p. 228, *neutra*, p. 229, *immixta*, p. 230, *fraudigera*, *vaalensis*, p. 231, *manicana*, p. 232, *languens*, *ignava*, p. 234, *egens*, *paupercula*, p. 235, *ovampoana*, p. 236, *spuria*, p. 237, *spectabilis*, p. 239, *algoa*, *zambesiana*, p. 240, *salisburyana*, p. 241, *elegans*, *furva*, p. 242, *noscitata*, p. 243, *indotata*, p. 245, *fatidica*, *scabiosa*, p. 246, *caffra*, p. 247, *increta*, p. 248, *confinis*, *divulsa*, p. 249, *inops*, p. 250, *vicaria*, p. 251, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Sebakue* **n. g.** near *Schizonycha*, *S. coriacea* **n. sp.**, S. Africa, PÉRINGUEY, p. 264, t. c.
- Serica* (*Ophthalmoserica*) *rosinæ*, Amurland, PIC, p. 33, Echange 1904, **n. sp.**
- Sparrmannia transvaalica*, *capicola*, p. 176, *prieska*, *namaqua*, *boschimana*, p. 177, *gonagua*, p. 178, *discrepans*, p. 179, *bechuana*, p. 180, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**
- Stenosserica delagoana*, *zambesicola*, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Suntemnonycha* **n. g.** near *Schizonycha*, *S. collusor* **n. sp.**, Rhodesia, PÉRINGUEY, p. 262, t. c.
- Syngeneschiza omrumba*, Ovampoland, PÉRINGUEY, p. 261, t. c. **n. sp.**
- Tlaocera* **n. g.** near *Macrophylla*, *T. saga* **n. sp.**, Cape Colony, PÉRINGUEY, p. 133, t. c.
- Trichinopus titania*, Damaraland, PÉRINGUEY, p. 165, t. c. **n. sp.**
- Trochalis vagus*, damarus, p. 44, *nashunus*, p. 45, *inops*, *exasperans*, p. 46, *orbiculatus*, p. 48, *placens*, p. 49, *lepidus*, *urbanus*, *sebakuanus*, p. 51, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Tulbaghia* **n. g.** near *Microcamenta*, p. 88, *T. lightfooti*, p. 89, *cereris*, p. 90, **n. spp.**, Cape Colony, PÉRINGUEY, t. c.

Rutelini.

- [Cf. BATES (92), FAIRMAIRE (473, 474), JACOBSON (740), OHAUS (990, 991).]
- Revision of Australian *Anoplognathides*, OHAUS, pp. 57-175, Stettin Ent. Zeit. lxxv.
- Revision of American *Anoplognathides*, pt. i, OHAUS, t. c. pp. 254-341.
- Revision of *Pelidnotine* with table of genera, BATES, Tr. ent. Soc. London 1904, pp. 249-276.
- Adoretus ampliatus*, p. 226, *rugosohirtus*, p. 227, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlvi, **n. spp.**
- Amblyterus clypealis*, Australia, OHAUS, p. 165, Stettin Ent. Zeit. lxxv, **n. sp.**
- Anomala gudzenkoi*, Mantchuria, JACOBSON, p. xiii, Annuaire Mus. St. Petersb. viii, **n. sp.**
- Anoplognathus acuminatus*, Australia, OHAUS, p. 105, Stettin Ent. Zeit. lxxv, **n. sp.**
- Antichira meridionalis*, injurious in Jamaica, PANTON, p. 117, Bull. Dep. Agric. Jamaica ii.
- Callithloris helleri*, p. 334, *kirschi*, p. 335, *bessleri*, p. 336, Peru and Colombia, OHAUS, Stettin Ent. Zeit. lxxv, **n. spp.**
- Chrysina beckeri* to *Plusiotis*, BATES, p. 272, Tr. ent. Soc. London 1904.
- Epichalcoptethis* **n. g.**, BATES, p. 253, and ARROW, p. 272, for *Pelidnota velutipes*, ARROW, Tr. ent. Soc. London 1904.
- Hoplogelidnota* **n. g.** *H. candezeei* **n. sp.**, Cayenne, p. 274, BATES, t. c.
- Hoplognathus maculatus* = (*Pelidn. bimaculata* Cast.), ARROW, p. 260, Tr. ent. Soc. London 1904.
- Lasiocala ohausi*, Colombia, BATES, p. 273, Tr. ent. Soc. London 1904, **n. sp.**

- Mecopelidnota* n. g. p. 270, *M. arrowi*, Ecuador, n. sp. p. 271, and including *P. cylindrica* Waterh., BATES, t. c.
- Microrutela* n. g. for *Chalcentis cœrulea* and *lauta*, BATES, p. 250, t. c.
- Paraschizognathus* n. g., p. 125, for *nigripennis* Bl. etc., and *P. prasini-collis*, p. 128, *olivaceus*, p. 132, n. spp., Australia, OHAUS, Stettin Ent. Zeit. lxxv.
- Pelidnota quadripunctata*, p. 260, *aciculata*, Cayenne, *kirschi*, p. 261, with var. *tenuistriata*, *dubia*, p. 262, Colombia, *acutipennis*, Venezuela, p. 263, *vittipennis*, Brazil, p. 264, *chiriquina*, Panama, p. 265, *paraguayensis*, Paraguay, p. 266, *championi*, Tucuman, *ancilla*, p. 267, *pallidipennis*, p. 268, *fracida*, Brazil, *cayennensis*, Guiana, p. 269, BATES, Tr. ent. Soc. London 1904, n. spp.
- Phalangogonia debilitens*, Costa Rica, OHAUS, p. 271, Stettin Ent. Zeit. lxxv, n. sp.
- Platycelium inflata*, Bolivia, p. 286, *limbata*, Argentina, p. 288, *steinheili*, Colombia, p. 291, *foreipalis*, Ecuador, p. 293, *occidentalis*, Colombia, p. 296, *abdominalis*, Peru, p. 299, *mesosternalis*, Costa Rica, p. 300, *variolosa*, Colombia, p. 304, *nigrosternalis*, p. 305, with varr. *levigata*, *pygidialis*, p. 306, *puncticollis*, p. 307, with varr. *bilineata*, *unicolor*, p. 309, *tschudii*, p. 309, *wallisi*, p. 311, *burmeisteri*, p. 312, *unguicularis*, p. 314, *flavoscutellata*, p. 315, *hirta*, p. 317, *confluens*, p. 318, *chrysotina*, p. 320, *pulchrior*, p. 321, *gaujoni*, p. 323, *rufosignata*, p. 331, N. W. South America, OHAUS, t. c. n. spp.
- Plusiotis cupreomarginata*, Costa Rica, BATES, p. 272, Tr. ent. Soc. London 1904, n. sp.
- Pseudoschizognathus* n. g., p. 145, *P. variicollis*, p. 146, *schonfeldti*, p. 147, n. spp., Australia, OHAUS, Stettin Ent. Zeit. lxxv.
- Rutela versicolor* Latr.=(*Pelidn. venezuelensis* G. & H.), ARROW, p. 260, Tr. ent. Soc. London 1904.
- Sarlostomus felschei*, p. 156, *weiskei*, p. 157, Australia, OHAUS, Stettin Ent. Zeit. lxxv, n. spp.
- Schizognathus burmeisteri*, p. 138, *viridiæneus*, p. 140, *lucidus*, p. 142, Australia, OHAUS, t. c. n. spp.
- Trioplognathus* n. g. for *griseopilosus* Oh., OHAUS, p. 133, t. c.
- Xenopelidnota* n. g. for *Plusiotis anomala*, BATES, p. 275, Tr. ent. Soc. London 1904.

Dynastini.

[Cf. BRETHES (175), BROWN (184), KOLBE (830), STERNBERG (1344).]

- Aegopsis atra*, Chiriqui, Colombia, p. 21, *trinidadensis*, Trinidad, p. 24, *nigricollis*, Colombia, p. 26, *rubricollis*, Orinoco, p. 28, STERNBERG, Deutsche ent. Zeitschr. 1904, n. spp.
- Alcidossoma siamensis*, and ♂ minor, pl. ix bis fig. 2, p. 51, Mission Pavie iii.
- Cyclocephala tucumana*, p. 330, *andina*, p. 331, Tucuman, BRÈTHES, An. Mus. Buenos Aires xi, n. spp.
- Peltonotus morio*, ♂, FAIRMAIRE, p. 88, Mission Pavie iii.
- Pentodon subdilatus*, *idiota*, note, pp. xv-xvii; *P. reitteri* n. n., p. xvi, JAKOVLEV, Annuaire Mus. St. Petersb. ix.
- Pericoptus frontalis*, New Zealand, BROWN, p. 55, Ann. Nat. Hist. xiv, n. sp.
- Temnorrhynchus glauningi*, Lake Tchad, KOLBE, p. 295, Berlin. ent. Zeitschr. xlix, n. sp.

Cetoniini.

[Cf. FAIRMAIRE (473, 474), HAUSER (664), HEATH (668), KOLBE (830, 831), MOSER (964, 965), PIC (1075), PREISS (1106).]

Structure and classification of *Valgidæ*, KOLBE, pp. 3-9, Stettin Ent. Zeit. lxxv.

- Amaurina polysticta* var. n. *picticollis*, MOSER, p. 66, Berlin. ent. Zeitschr. xlix.
- Anepsiovalgus* n. g., p. 30, *A. minus* n. sp., Sumatra, p. 32, KOLBE, Stettin Ent. Zeit. lxy.
- Anochilia subvidua*, p. 227, *laterivirens*, p. 228, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, n. spp.
- Bothrorrhina nickerli* ♀, HELLER, p. 12, Deutsche ent. Zeitschr. 1904; *B. rufonasuta* Fairm. = (*nickerli* Hell.), HELLER, p. 303, t. c.
- Brachymitra* n. g. near *Compscephalus*, *B. thomasi* n. sp., E. Africa, KOLBE, p. 297, Berlin. ent. Zeitschr. xlix.
- Callinomes ruiventris*, Laos, FAIRMAIRE, p. 86, Mission Pavie iii, n. sp.
- Charitovalgus*, n. g. p. 20 for *Valgus pulcher, dorieæ*, and *C. andamanicus* n. sp., Andamans, p. 22, KOLBE, Stettin Ent. Zeit. lxy.
- Clinteria usambarica*, E. Africa, MOSER, p. 60, Berlin. ent. Zeitschr. xlix, n. sp.
- Celorrhina cornuta*, E. Africa, p. 101, fig. 2, HEATH, Entomologist 1904, n. sp.
- Coptomia bontempi*, characters, FAIRMAIRE, p. 229, Ann. Soc. ent. Belgique xlviii.
- C. castanoptera*, Madagascar, FAIRMAIRE, p. 228, t. c. n. sp.
- Cyclophorus marginicollis*, Sao-Thomé, MOSER, p. 59, Berlin. ent. Zeitschr. xlix, n. sp.
- Dasyvalgus* n. g. p. 34, for part of *Valgus*, and *D. infuscatus*, Borneo, p. 37, *udei*, Sumatra, p. 38, *rollei*, p. 39, *monachus* with subsp. *polyxanthus*, p. 40, Borneo, *dohrni*, Sumatra, p. 41, *eucharis*, Malacca, p. 42, n. spp., KOLBE, Stettin Ent. Zeit. lxy; *D. pygidialis*, Sumatra, p. 267, *striatipennis*, Perak, p. 268, *bipustulatus*, Borneo, *fraterculus*, Sumatra, p. 269, *piceus*, Tonkin, p. 270, *nigerrimus*, Borneo, p. 271, MOSER, Berlin. Ent. Zeitschr. xlix: n. spp.
- Diphronitis hintzi*, E. Africa, MOSER, p. 70, t. c. n. sp.
- Dischista marginata*, E. Africa, MOSER, p. 6, t. c. n. sp.
- Discopeltis picta*, p. 66, *variabilis*, p. 67, with varr., pp. 68, 69, E. Africa MOSER, t. c. n. spp.
- Euchilia laxecostata, satarata, protensa, externecostata*, Madagascar, FAIRMAIRE, p. 230, Ann. Soc. ent. Belgique xlviii, n. spp.
- Eucosma flavosignata*, Sao-Thomé, MOSER, p. 64, Berlin. Ent. Zeitschr. xlix, n. sp.
- Eudicella immaculata*, Uganda, HEATH, p. 102, fig. 1, Entomologist 1904, n. sp.
- Fornasinius hirthi*, E. Africa, PREISS, p. 15, pl. i, fig. 1, Jahrb. nassau. Ver. lvii, n. sp.
- Goliathopsis lameyi*, pl. ix bis, fig. 5, p. 90, FAIRMAIRE, Mission Pavie iii.
- Goliathus giganteus*, var. n. *connectens*, CSIKI, p. 302, Ann. Mus. Hungar. ii; *G. giganteus*, var. n. *grandis*, VEEN, pp. 64-66, pl., Bull. kol. Mus. Haarlem xxx.
- Hoplitovalgus* n. g. *H. fallaciosus* n. sp., Borneo, KOLBE, p. 49, Stettin Ent. Zeit. lxy.
- Hybovalgus* n. g. p. 55, *H. bioculatus* n. sp., Tonkin, p. 56, KOLBE, t. c.; *H. tonkinensis, fulvosquamosus*, Tonkin, MOSER, p. 272, Berlin. ent. Zeitschr. xlv, n. spp.
- Ischyrocera* n. g. p. 34, *I. darcisi* n. sp., Africa, p. 35, HAUSER, Deutsche ent. Zeitschr. 1904.
- Leucocelis elegans*, var. n. *ornaticollis*, MOSER, p. 66, Berlin. ent. Zeitschr. xlix.
- L. ertli*, pl. i, fig. 4, p. 22, *bucobensis*, fig. 5, p. 24, *irentina*, fig. 6, p. 25, *angustiformis*, fig. 7, p. 26, PREISS, Jahrb. nassau. Ver. lvii, n. spp.
- Nannovalgus* n. g. p. 26, *N. pusio* n. sp., Borneo, p. 27, KOLBE, Stettin Ent. Zeit. lxy.

- Neophædinus melaleucus*, pl. ix bis, fig. 4, p. 89, FAIRMAIRE, Mission Pavie iii.
- Neptunides polychrous* var. n. *marginipennis*, MOSER, p. 59, Berlin. ent. Zeitschr. 1904.
- Oreovalgus* n. g. p. 18, *O. montuosicollis* n. sp., Borneo, p. 19, KOLBE, Stettin Ent. Zeit. lxxv.
- Osmoderma brevipennis*, Taurus, PIC, p. 74 & p. 83, Echange xx, n. sp.
- Oxythyrea albomaculata*, E. Africa, MOSER, p. 65, Berlin. ent. Zeitschr. xlix, n. sp.
- Pachnoda discolor* var., pl. i, fig. 2, p. 19, PREISS, Jahrb. nassau. Ver. lviii.
- P. testaceipennis*, E. Africa, MOSER, p. 61, Berlin. ent. Zeitschr. xlix; *P. sauberlichii*, E. Africa, HAUSER, p. 36, Deutsche ent. Zeitschr. 1904: n. spp.
- Pædiovalgus* n. g. p. 14, *P. micros* n. sp., Borneo, p. 15, with varr. *parvus*, *lineellus*, *morio*, p. 17, KOLBE, Stettin Ent. Zeit. lxxv.
- Paraleucocelis* n. g. *P. conradsi*, n. sp. E. Africa, pl. i, fig. 3, PREISS, p. 21, Jahrb. nassau. Ver. lviii.
- Parapæcilophila* n. g. p. 36, *P. kraatzi* n. sp., E. Africa, p. 37, HAUSER, Deutsche ent. Zeitschr. 1904.
- Piochilia* Fairm. and *Prochyta* Fairm. are the same, *P. scalabri* ♂, FAIRMAIRE, p. 227, Ann. Soc. ent Belgique xlviii.
- Plocovalgus* n. g. *P. waterstradti* n. sp., Borneo and subsp. *rufosquamosa*, KOLBE, p. 45, Stettin Ent. Zeit. lxxv.
- Pæcilophila tessellata*, E. Africa, MOSER, p. 69, Berlin. ent. Zeitschr. xlix, n. sp.
- Potosia affinis*, *cuprea*, *incerta*, distinctions, MÜLLER, pp. 172, 173, Wien. ent. Zeit. xxiii.
- Pseudinea moseri*, Nyassa, HAUSER, p. 38, Deutsche ent. Zeitschr. 1904, n. sp.
- Pygora luctifera*, variation, synonymy, FAIRMAIRE, p. 229, Ann. Soc. ent. Belgique xlviii.
- Ranzania bertolonii minor* subsp. n., KOLBE, p. 298, Berlin. ent. Zeitschr. xlix.
- Sphinctovalgus* n. g. p. 51, *S. conradti* n. sp., Cameroons, p. 53, KOLBE, Stettin Ent. Zeit. lxxv.
- Spilovalgus* n. g. for *Valgus modiglianii* Gestro, KOLBE, p. 32, Stettin Ent. Zeit. lxxv; *S. biguttatus*, Perak, p. 266, *propygidialis*, Assam, p. 267, MOSER, Berlin. ent. Zeitschr. xlix, n. spp.
- Syngonovalgus* n. g. p. 28, *S. subnitidus* n. sp., Borneo and Sumatra, p. 29, KOLBE, Stettin Ent. Zeit. lxxv.
- Systellorhina tricolor*, p. 62, *kolbei*, p. 63, E. Africa, MOSER, Berlin. ent. Zeitschr. xlix, n. spp.
- Theodosia telifer*=(*rothschildi* Jans.), MOSER, p. 273, t. c.
- Trapezorrhina* n. g. p. 33, *T. sordida* n. sp., Africa, p. 34, HAUSER, Deutsche ent. Zeitschr. 1904.
- Trichovalgus* subg. n. of *Dasyvalgus* for *niger* Kr., KOLBE, p. 44, Stettin Ent. Zeit. lxxv.
- Valgus keysseri*, N. Guinea, HAUSER, p. 40, Deutsche ent. Zeitschr. 1904, n. sp.

BUPRESTIDÆ.

[Cf. ABEILLE (1, 5), ESCALERA (467), FAIRMAIRE (473), FAUVEL (486), JAKOVLEFF (752, 753), KERREMANS (786, 787), PIC (1065), RAINBOW (1119), REITTER (1141, 1155), SCHAEFFER (1220), THÉRY (1377, 1378), WATERHOUSE (1491).]

The *Buprestidæ* of trop. Africa, pt. 1, *Julodines*, KERREMANS, Ann. Mus. Congo, Zool. iii, 1, 65 pp., 1 pl.

Addenda and corrigenda to Kerremans' Genera, PIC, Bull. Soc. zool. France xxix, pp. 135-138.

- Acherusia saundersii*, Brazil, WATERHOUSE, p. 249, Ann. Nat. Hist. xiv, n. sp.
- Acmaeodera*; synonymy, WATERHOUSE, pp. 258-265, t. c.; *A. hirsutula* var. n. *equistriata*, p. 221, *A. laticornis* var. n. *olivacea*, p. 223, ABEILLE, Bol. Soc. espan. iv.
- A. varivestis*, Tunis, p. 220, *crucifera*, Persia, p. 221, *pilivestis*, Spain, *nigellata*, Portugal, p. 222, ABEILLE, t. c.; *A. akbesiana*, Syria, p. 224, *segurensis*, Spain, p. 225, ESCALERA, Bol. Soc. espan. iv; *A. saundersii*, *sumptuosa*, p. 261, Africa, *jamesi*, Somali land, p. 262, *de geeri*, Transvaal, p. 263, *tricolor*, Damara, *brooksi*, Buluwayo, p. 264, *yerburyi*, Arabia, p. 265, WATERHOUSE, Ann. Nat. Hist. xiv; *A. suturifera*, Afghanistan, p. 256, *filiformis*, p. 257, Gobi, REITTER, Wien. ent. Zeit. xxiii; *A. rubescens*, Lower California, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii : n. spp.
- Actenodes flexicaulis*, Texas, SCHAEFFER, p. 209, t. c. n. sp.
- Agrilus chlorophyllus*, Akbès, ABEILLE, p. 223, Bol. Soc. espan. iv; *A. horni*, p. 161, *aurociliatus*, *nalandæ*, p. 162, *kandyanus*, *atomus*, p. 163, *motschoulskyi*, p. 164, *walkeri*, p. 165, Ceylon, THÉRY, Ann. Soc. ent. Belgique xlviii; *A. dollii*, Texas, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii : n. spp.
- Ancylolcheira*; notes on palaearctic, ABEILLE, pp. 213, 214, Bol. Soc. espan. iv.
- A. severa*, Syria, id. p. 213, t. c. n. sp.
- Anthaxia schah*, Persia, *fulgentipennis*, Algeria, p. 215, *permisa*, Persia, p. 217, ABEILLE, t. c. n. spp.
- Astreus caledonicus*, New Caledonia, FAUVEL, p. 116, Rev. Ent. franc. 1904, n. sp.
- Aurigena lugubris* = (*areiventris europæa* Ab.), BEDEL, p. 236, Abeille xxx.
- A. guttipennis*, Persia, ABEILLE, p. 213, Bol. Soc. espan. iv, n. sp.
- Buprestis alternans*, Syria, *escalera*, Persia, ABEILLE, p. 212, t. c. n. spp.
- Capnodis miliaris* var. n. *aurata*, ABEILLE, p. 211, t. c.
- Cardiaspis pisciformis*, Mysore, THÉRY, p. 73, Bull. Soc. ent. France 1904, n. sp.
- Castalia pulchra*, India, p. 252, *fairmairei*, Tonkin, *bettoni*, E. Africa, p. 253, WATERHOUSE, Ann. Nat. Hist. xiv, n. spp.
- Chrysaspis*; synonymy, WATERHOUSE, pp. 344-347, t. c.
- C. glabra*, p. 344, *tincta*, *dubia*, *bennettii*, p. 346, *higletti*, p. 347, Africa, WATERHOUSE, Ann. Nat. Hist. xiv, n. spp.
- Chrysobothris amurensis*, Amurland, PIC, p. 25, Echange 1904; *C. musæ*, Ceylon, THÉRY, p. 160, Ann. Soc. ent. Belgique xlviii; *C. purpureoplagiata*, Arizona, p. 206, *beyeri*, *peninsularis*, Lower California, p. 207, *subapaca*, (sic) Tulare, p. 208, SCHAEFFER, J. N. York Ent. Soc. xii : n. spp.
- Chrysochroa fruhstorferi*, Tonkin, *thelwalli*, Nyassa, WATERHOUSE, p. 266, Ann. Nat. Hist. xiv, n. spp.
- Cinyra prosternalis*, Texas, SCHAEFFER, p. 205, J. N. York Ent. Soc. xii, n. sp.
- Compsoglypha* n. g. near *Psiloptera*, *C. perrieri* n. sp., Madagascar, FAIRMAIRE, p. 233, Ann. Soc. ent. Belgique xlviii.
- Conognatha mayeti*, Peru, THÉRY, p. 75, Bull. Soc. ent. France 1904, n. sp.
- Coræus helichrysi*, France, ABEILLE, p. 282, Bull. Soc. ent. France 1904, n. sp.
- Cylindromorphus turkestanicus*, Turkestan, ABEILLE, p. 224, Bol. Soc. espan. iv, n. sp.
- Demochroa boweringi*, N. India, *meldolana*, Andamans, WATERHOUSE, p. 265, Ann. Nat. Hist. xiv, n. spp.
- Dicerca*; table of palaearctic, REITTER, pp. 21-24, Wien. ent. Zeit. xxiii.
- D. miranda*, Herzegowina, id. t. c. p. 24, n. sp.

- Discoderes polychrous*, *cavifrons*, Madagascar, FAIRMAIRE, p. 234, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Julodis onopordi* variation, varr. *n. longicollis*, *derasa*, etc., ABEILLE, pp. 207–210, Bol. Soc. espan. iv.
- J. escalerae*, *monstrosa*, Persia, ABEILLE, p. 206, t. c. **n. spp.**
- Lampropepla n. n.* for *Madecassia* Kerr., *L. ophthalmica n. sp.*, Madagascar, FAIRMAIRE, p. 231, Ann. Soc. ent. Belgique xlviii.
- Mastogenius reticulaticollis*, Texas, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii, **n. sp.**
- Melanophila sumptuosa*, Spain, ABEILLE, p. 214, Bol. Soc. espan. iv, **n. sp.**
- Nalanda n. g.* near *Melibæus*, *N. horni n. sp.*, Ceylon, THÉRY, p. 160, Ann. Soc. ent. Belgique xlviii.
- Paracastalia longipennis*, p. 249, *bettoni*, p. 250, *variegata*, p. 251, Africa, WATERHOUSE, Ann. Nat. Hist. xiv, **n. spp.**
- Polybothris pulchriventris*, p. 232, *pygidialis*, p. 233, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Polycesta*; synonymy, WATERHOUSE, pp. 254–258, Ann. Nat. Hist. xiv.
- P. alternans*, Mexico, *regularis*, St Domingo, p. 256, *gossei*, Jamaica, p. 257, *variegata*, Mexico, p. 258, WATERHOUSE, t. c. **n. spp.**
- Ptosima*; only one Pal. species; *P. 11-maculata* var. *n. intermedia*, DE-MAISON, p. 285, Bull. Soc. ent. France 1904; *P. amalibis* var. *n. hieroglyphica*, THÉRY, p. 158, Ann. Soc. ent. Belgique xlviii.
- Rheboscclis texana*, Brownsville, SCHAEFFER, p. 211, J. N. York Ent. Soc. xii, **n. sp.**
- Sphenoptera luctifica n. n.* for *luctuosa* Jak., JAKOVLEFF, p. 310, Rev. Russe Ent. 1904; *S. perroteti* var. *n. rugosiventris*, THÉRY, p. 159, Ann. Soc. ent. Belgique xlviii.
- S. (Hoplandrocneme) venusta*, Tiflis, JAKOVLEFF, p. 309, Rev. Russe Ent. 1904; *S. longipennis*, Issyk-Kul, p. 174, *cæsia*, Bucharra, p. 175, *luctuosa*, Dsungaria, p. 177, *S. (Hoplitura) ligulata*, Persia, p. 178, *grata*, Cairo, p. 180, *S. (Chrysoblemma) seriola*, Algeria, p. 181, *S. (Chilostetha) cauta*, Syria, p. 183, *S. (Deudora) caspica*, p. 184, Caspian, JAKOVLEFF, Horæ Soc. ent. Ross. xxxvii; *S. horni*, Ceylon, THÉRY, p. 159, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Steraspis arabica*, Muscat, WATERHOUSE, p. 348, Ann. Nat. Hist. xiv, **n. sp.**
- Sternocera*; much synonymy, WATERHOUSE, pp. 245–248, t. c.
- S. druryi*, Sudan, *stevensii*, Africa, WATERHOUSE, p. 247, t. c. **n. spp.**
- Stigmodera cydistu*, Sydney, RAINBOW, p. 246, Rec. Austral. Mus. v, **n. sp.**
- Strobilodera gastoni*, E. Africa, THÉRY, p. 74, Bull. Soc. ent. France 1904, **n. sp.**
- Trachys horni*, p. 165, *bellicosa*, p. 166, *pretiosus*, *centrimaculatus*, p. 167, Ceylon, THÉRY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

EUCNEMIDÆ.

[Cf. BLANCHARD (135), FAIRMAIRE (473), FAUVEL (486).]

- Cephalodendron sicardi*, Madagascar, FAIRMAIRE, p. 235, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Dromacotus hospitalis*, California, BLANCHARD, p. 187, Ent. News Philad. xv, **n. sp.**
- Fornax caledonicus*, p. 121, *ferrugineus*, *brevicornis*, *soricinus*, p. 122, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**

ELATERIDÆ.

[Cf. CARRET (246), DU BUYSSON (214, 215, 216), DANIEL & DANIEL (349), FAIRMAIRE (473), FAUVEL (486), FLEUTIAUX (518), PIC (1059, 1065), RAINBOW (1119), REITTER (1151, 1152, 1156), SCHWARZ (1265, 1266).]

- Adelocera subaurata*, Ceylon, SCHWARZ, p. 46, Spolia Zeylan. ii, n. sp.
Æolus dimidiatofasciatus, Sao Paulo, SCHWARZ, p. 71, Deutsche ent. Zeitschr. 1904, n. sp.
Agriotes conspicuus, characters, DU BUYSSON, p. 1, Rev. Ent. franc. xxiii.
Agriotes dilataticoris, Morocco, DU BUYSSON, p. 42, t. c.; *A. nigropubens*, Asia Minor, REITTER, p. 158, Wien. ent. Zeit. xxiii : n. spp.
Anoploschius mutabilis, variation, SCHWARZ, p. 11, Deutsche ent. Zeitschr. 1904; *A. anguineus* Er. = (*basalis* = *femorialis* Schw.), id. p. 15, t. c.
A. mutabilis, p. 51, *aneipennis*, p. 52, *trivittatus*, p. 53, *punctatissimus*, p. 54, *nigrolaterus*, p. 55, S. America, SCHWARZ, t. c. n. spp.
Athous unicoloris varr. n. *gredosanus* and *uhagoni*, REITTER, p. 237, Bol. Soc. espan. iv.
A. subvirgatus, Venetia, K. DANIEL, p. 79, Munchen. Kol. Zeitschr. ii; *A. villardi*, Genoa, CARRET, p. 170, Bull. Soc. ent. France 1904; *A. (Stenagostus) laufferi*, p. 236, *A. (Nomopleus) discors*, p. 237, *martinezi*, *longissimus*, p. 238, *A. (Gripathous) bolivari*, p. 239, Spain, REITTER, Bol. Soc. espan. iv; *A. bagdadensis*, Bagdad, p. 6, *uhagoni*, Spain, p. 7, DU BUYSSON, Rev. Ent. franc. xxiii; for further notes on these and their possible synonymism, cf. t. c. pp. 156, 157; *A. eximius*, p. 58, *insulsus*, p. 59, Amurland, *nadari*, Basses Pyrénées, p. 60, DU BUYSSON, Bull. Soc. ent. France 1904 : n. spp.
Atractosomus angustus, p. 59, *pedestris*, p. 60, Brazil, SCHWARZ, Deutsche ent. Zeitschr. 1904; *A. testaceipennis*, Brazil, SCHWARZ, p. 70, Deutsche ent. Zeitschr. 1904 : n. spp.
Campylus korbi, Amurland, PIC, p. 25, Echange 1904, n. sp.
Cardiophorus eliasi, Amanus Mts., PIC, p. 298, Bull. Soc. ent. France 1904; *C. aneipennis*, Madagascar, FLEUTIAUX, p. 12, Bull. Soc. ent. France 1904 : n. spp.
Cardiorhinus divaricatus, p. 62, *intermedius*, p. 63, *ruficollis*, p. 64, *infernus*, p. 65, *dimidiatus*, p. 66, *collaris*, p. 67, *cylindricus*, p. 68, Brazil, SCHWARZ, Deutsche ent. Zeitschr. 1904, n. spp.
Clon cerambycinus, ♀, SEMENOV, p. 120, Rev. Russe Ent. iv.
Corymbitodes subg. n. of Ludius, *C. longicollis* n. sp., Amurland, DU BUYSSON, p. 58, Bull. Soc. ent. France 1904.
Cosmesus posticinus, Brazil, SCHWARZ, p. 69, Deutsche ent. Zeitschr. 1904; *C. cruciger*, p. 79, *atomus*, Argentina, *chiliensis*, *minusculus*, Chili, p. 80, SCHWARZ, t. c. : n. spp.
Didymolophus n. g. near *Dichelonychus*, p. 235. *D. perrieri* n. sp., Madagascar, p. 236, FAIRMAIRE, Ann. Soc. ent. Belgique xlvi.
Elater gelincki, Herzegowina, REITTER, p. 148, Wien. ent. Zeit. xxiii; *E. nigrita*, *frontalis*, p. 128, *marginellus*, p. 129, New Caledonia, FAUVEL, Rev. Ent. franc. 1904 : n. spp.
Grammophorus bruchi, Argentina, p. 71, *minor*, Chili, p. 72, SCHWARZ, Deutsche ent. Zeitschr. 1904, n. spp.
Horistonotus bicolor, Sydney, RAINBOW, p. 246, Rec. Austral. Mus. v, n. sp.
Ischiodontus laterus, p. 55, *testaceus*, p. 56, *aneus*, p. 57, *bivittatus*, p. 58, *ellipticus*, p. 59, S. America, SCHWARZ, Deutsche ent. Zeitschr. 1904, n. spp.
Isidus; characters and position, DU BUYSSON, p. 7, Rev. Ent. franc. xxiii.
Ludius, cf. *Corymbitodes*.
Melanoxanthus picturatus, New Caledonia, FAUVEL, p. 131, Rev. Ent. franc. 1904, n. sp.
Monocrepidius brachypterus, Lifu, FAUVEL, p. 127, t. c.; *M. chilensis*, Chili, SCHWARZ, p. 70, Deutsche ent. Zeitschr. 1904 : n. spp.
Ochosternus pacificus, *cribriceps*, p. 134, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, n. spp.
Pomachilius brevicornis, Brazil, SCHWARZ, p. 61, Deutsche ent. Zeitschr. 1904; *P. fulvescens*, *apicatus*, p. 73, *preterminatus*, *scriptus*, p. 74, mul-

timaculatus, p. 75, *variegatus*, p. 76, *cinctipennis*, p. 77, *krugi*, *polygrammus*, p. 78, S. America, SCHWARZ, t. c. : **n. spp.**
Semiotus subvirescens, Ecuador, p. 49, *alternatus*, Venezuela, p. 50, SCHWARZ, t. c. **n. spp.**

RHIPICERIDÆ and DASCILLIDÆ.

[Cf. FAIRMAIRE (474, 476, 478), FAUVEL (486).]

Agathorhipis **n. g.** *Rhipiceridæ*, *A. bifossata* **n. sp.**, New Caledonia, FAUVEL, p. 136, Rev. Ent. franc. 1904.
Cladotoma bruchii, Tucuman, FAIRMAIRE, p. 61, Bull. Soc. ent. France 1904 ; *C. russula*, p. 154, *maculicollis*, p. 155, Brazil, FAIRMAIRE, t. c. : **n. spp.**
Eubrianax insignis, Indo China, FAIRMAIRE, p. 87, Mission Pavie iii, **n. sp.**
Pseudolichas nivipictus, Laos, FAIRMAIRE, p. 86, t. c. **n. sp.**

MALACODERMIDÆ.

[Cf. BOURGEOIS (160, 161), FAIRMAIRE (473), FAUVEL (486), FIORI (509), PIC (1055, 1058, 1060, 1062, 1065, 1066, 1068, 1071, 1074, 1075, 1077), REITTER (1152), SCHAEFFER (1220), TOWNSEND (1392).]

Malacodermidæ, collected by BURCHELL in S. Africa and Brazil, BOURGEOIS (161).

Gigantic larva, *Lampyrides*, described, LUCAS, p. 104, Mission Pavie iii.
 Light-organ, *Photinus*, TOWNSEND (1392).

Acanthocnemus = (*Eurema* Ab. = *Hovacnemus* Fairm.), there is only one species known, BOURGEOIS, pp. 25, 26, Bull. Soc. ent. France 1904.

Anthonomus [sic] *martini*, Natal, PIC, p. 27, Echange 1904, **n. sp.**

Astylus longipennis, Brazil, PIC, p. 29, t. c. **n. sp.**

Attalus africanus, Natal, PIC, p. 28, t. c. ; *A. (Mixis) rufithorax*, S. Africa, PIC, p. 33, t. c. : **n. spp.**

Balanophorus macleayi, pl. iv, fig. 8, p. 91 ; LEA, P. Linn. Soc. N. S. Wales xxix.

Calosotis? *barkeri*, Natal, PIC, p. 66, Echange xx, **n. sp.**

Cantharis livida var. *n. varendorffi*, REITTER, p. 159, Wien. ent. Zeit. xxiii ; *C. brachypterus* ♀ ; *malatiensis* var. *n. detectiventris*, PIC, p. 71, Bull. Soc. ent. France 1904.

C. ponticus, *cilicius*, Asia Minor, PIC, p. 9, Echange ix ; *C. raddensis*, Amurland, PIC, p. 26, Echange 1904 : **n. spp.**

Celetes burchelli, Brazil, BOURGEOIS, p. 93, Ann. Nat. Hist. xiii, **n. sp.**

Cenophengus? *pallidus*, Texas, SCHAEFFER, p. 213, J. N. York Ent. Soc. xii, **n. sp.**

Chlamydolycus burchelli, S. Africa, BOURGEOIS, p. 91, Ann. Nat. Hist. xiii, **n. sp.**

Cyrtosus subcylindricus, Syria, PIC, p. 3, Echange 1904 ; *C. diversicornis*, Algeria, PIC, p. 34, t. c. : **n. spp.**

Danacea martini, Spain, p. 2, *holtzi*, Taurus, p. 3, PIC, t. c. ; *D. tauricola*, *nitidissima*, Taurus, PIC, p. 73, t. c. : **n. spp.**

Dichelotarsus sulcithorax, Japan, PIC, p. 26, t. c. **n. sp.**

Drilus? *kandyanus*, Ceylon, BOURGEOIS, p. 481, Ann. Soc. ent. France 1903, **n. sp.**

Ebaeomorphus **n. g.** *E. ramicornis* **n. sp.**, Natal, PIC, p. 28, Echange 1904.

Ebaeus italicus, Rome, REITTER, p. 159, Wien. ent. Zeit, xxiii ; *E. amurensis*, Amur, PIC, p. 50, Echange xx ; *E. bahiensis*, Brazil, PIC, p. 28, t. c. : **n. spp.**

Eurema, cf. *Acanthocnemus*.

- Hapalochrous martini*, Natal, PIC, p. 28, Echange 1904; *H. appendicifer*, Cape Colony, PIC, p. 34, t. c. : n. spp.
- Henicopus plumbeus*, *pilosus*, distinctions, MÜLLER, p. 174, Wien. ent. Zeit. xxiii.
- Hovacnemus*, cf. *Acanthocnemus*.
- Idgia puncticollis*, S. India, BOURGEOIS, p. 483, Ann. Soc. ent. France 1903, n. sp.
- Luciola xanthochroa*, Madagascar, FAIRMAIRE, p. 236, Ann. Soc. ent. Belgique xlviii, n. sp.
- Malachius akbesianus* ♂, PIC, p. 216, Bull. Soc. ent. France 1904.
- M. cressius*, Crete, PIC, p. 10, Echange 1904; *M. elaphus*, ♀, PIC, p. 42, Bull. Soc. ent. France 1904; *M. lusitanicus*, habits, larva, XAMBEU, pp. 58-63, Soc. Pyrenées-or. xlv; *M. arctelimbatus*, p. 287, *japonicus*, p. 288, Japan, PIC, Bull. Soc. ent. France : n. spp.
- Malithinus flavicollis*, Spain, PIC, p. 4, Echange 1904; *M. (Progeutes) drurei*, Bagdad, PIC, t. c. : n. spp.
- Malthodes (Podistrina) arbaensis*, Tunis, PIC, p. 3, Echange 1904; *M. holtzi*, Crete, PIC, p. 9, t. c. ; *M. malcolmi*, Malta, PIC, p. 49, t. c. ; *M. (Malthinellus) messenius*, p. 74, *M. (Podistrina) raguseæ*, p. 75, Sicily, FIORI, Natural. Sicil. xvii : n. spp.
- Megalophthalmus ptiliniformis*, Pará, BOURGEOIS, p. 98, Ann. Nat. Hist. xiii, n. sp.
- Melyris crenicollis*, Algeria, PIC, p. 90, Echange xx, n. sp.
- Neocarpurus impunctatus*, pl. iv, fig. 9, p. 91, LEA, F. Linn. Soc. N. S. Wales xxix.
- Pagurodactylus? apicalis*, Natal, PIC, p. 66, Echange xx, n. sp.
- Paraptorthodius* n. g. near *Ptorthodius*, *P. mirabilis* n. sp., Texas, SCHAEFFER, p. 212, J. N. York Ent. Soc. xii.
- Plateros varicosatus*, Brazil, BOURGEOIS, p. 94, Ann. Nat. Hist. xii, n. sp.
- Platyceis cosnardi raddensis* subsp. n., PIC, p. 25, Echange 1904.
- Podabrus rosineæ*, Amurland, PIC, p. 25, t. c. n. sp.
- Pseudocolotes capensis*, *notatithorax*, S. Africa, PIC, p. 11, t. c. n. spp.
- Rhagonycha ericeti* and allies, PIC, p. 54, t. c.
- Selasia maindroni*, Genji, BOURGEOIS, p. 482, Ann. Soc. ent. France 1903, n. sp.
- Semijulistus*, characters and components, SEMENOV, p. 121, Rev. Russe Ent. iv.
- Silis nigrifrons*, Madagascar, FAIRMAIRE, p. 237, Ann. Soc. ent. Belgique xlviii; *S. maindroni*, Nilgiri Hills, BOURGEOIS, p. 480, Ann. Soc. ent. France 1904 : n. spp.
- Sphinginopalpus martini*, Natal, PIC, p. 12, Bull. Soc. ent. France 1904; *S. barkeri*, *formicoides*, *limbatus*, S. Africa, PIC, p. 65, Echange xx : n. spp.
- Telephorus fuscus*, larval habits, REMER, pp. 12, 13, Jahresber. Schlesisch. Ges. 1903, zool.-bot. sekt.
- Tylocerus apicalis*, Ceylon, BOURGEOIS, p. 479, Ann. Soc. ent. France 1903, n. sp.
- Tytthonyx ruficollis*, Texas, SCHAEFFER, p. 214, J. N. York Ent. Soc. xii, n. sp.
- Xamerpus rubronotatus*, Madagascar, PIC, p. 11, Echange 1904; *X. obscurus*, Natal, PIC, p. 28, t. c. : n. spp.

CLERIDÆ.

[Cf. FAUVEL (486), HOULBERT & BÉTIS (721), SCHAEFFER (1220), SCHENK-LING (1226).]

- Clerus palmii*, Arizona, SCHAEFFER, p. 218, J. N. York Ent. Soc. xii, n. sp.
- Colyphus furcatus*, Texas, SCHAEFFER, p. 218, t. c. n. sp.

- Cymatodera peninsularis*, Lower California, p. 214, *obliquefasciata*, p. 215, *fuchsii*, Texas, *latefascia*, Arizona, p. 216, *vandykei*, California, p. 217, SCHAEFFER, t. c. : n. spp.
- Enoplum granulatifenne*, p. 220, *nigrescens*, p. 221, Texas, SCHAEFFER, t. c. : n. spp.
- Hydnocera tricolor*, Texas, SCHAEFFER, p. 219, t. c. n. sp.
- Ommadius diversicollis*, New Caledonia, FAUVEL, p. 146, Rev. Ent. franc. 1904, n. sp.
- Pelonium maculicolle*, Texas, SCHAEFFER, p. 219, J. N. York Ent. Soc. xii, n. sp.
- Phlæocopus*, monograph, SCHENKLING, pp. 169–186, Ann. Mus. Genova xli.
- P. verticalis*, Somaliland, p. 183, *obscurus*, Madagascar, p. 186, id. t. c. n. spp.
- Trichodes kraatzi* var. = (*turkestunicus*), HINTZ, p. 420, Deutsche ent. Zeitschr. 1904 ; *T. kraatzi* and *turkestanicus*, distinguished, REITTER, p. 259, Wien. ent. Zeit. xxiii.

PTINIDÆ.

- [Cf. FAUVEL (486), PÉRINGUEY (1028), PIC (1052, 1054, 1060, 1062, 1064, 1067, 1068), REITTER (1149).]
- Cathorama diversestriata*, p. 56, *rudepunctata*, *argentina*, S. America, *rubriventris*, Mexico, p. 57, *thecaoides*, *tijucana*, *holosericea*, *fulvopubens*, *subpubescens*, p. 103, *minutissima*, p. 104, S. America, PIC, Naturaliste 1904 ; *C. baerti*, Peru, PIC, p. 19, Echange 1904 : n. spp.
- Ernobius incisus*, S. France, PIC, p. 2, t. c. n. sp.
- Eupactus* = (*Thaptor* Gorh.), PIC, p. 31, t. c.
- E. cribripennis*, *gibbosiceps*, *subopacus*, p. 31, *nigromaculatus*, *brunneo-notatus*, *argentifer*, p. 32, Brazil, PIC, t. c. ; *E. subnotatus*, *brunneus*, p. 36, *gounellei*, *barranus*, *bahiensis*, *minasensis*, *brevis*, *nigricolor*, *subattenuatus*, *rufonitens*, *humilis*, p. 37, Brazil, PIC, t. c. ; *E. donckieri*, Mexico, *funki*, *distinctipennis*, S. America, PIC, p. 19, t. c. n. spp.
- Eurostus cylindricornis*, Asia Minor, REITTER, p. 81, Wien. ent. Zeit. xxiii, n. sp.
- Leptothea* n. g. *Dorcatomini*, p. 151, *laticornis* n. sp., New Caledonia, p. 152, FAUVEL, Rev. Ent. franc. 1904.
- Mesocelopus rufithorax*, Congo, PIC, p. 12, Echange 1904 ; *M. venezuelensis* ["me paraît devoir rentrer dans le genre *Eupactus*"!], Venezuela, *sumatrensis*, Sumatra, PIC, p. 19, Echange 1904 : n. spp.
- Ozognathus inarmatus*, *rufescens*, Chili, PIC, p. 18, t. c. n. spp.
- Priotoma peruviana*, *flaviventris*, S. America, PIC, p. 19, t. c. n. spp.
- Ptinus tectus*, habits, CHAMPION, p. 85, Ent. Mag. xl.
- P. elegans*, Natal, PÉRINGUEY, p. 225, Ann. S. African Mus. iii ; *P. multi-maculatus*, p. 226, *decorsei*, p. 227, Madagascar, PIC, Bull. Mus. Paris 1904 ; *P. falli*, N. America, PIC, p. 19, Echange 1904 ; *P. gandolphei*, *parlonotatus*, N. America, PIC, p. 34, t. c. : n. spp.
- Thaptor sublineatus*, Chili, *australiensis*, Australia, *mexicanus*, Mexico, PIC, p. 18, t. c. n. spp.
- Theca oneili*, S. Africa, *pruinosa*, Madagascar, PIC, p. 11, t. c. ; *T. figurata*, New Caledonia and New Hebrides, p. 152, *semirufa*, New Caledonia, p. 153, FAUVEL, Rev. Ent. franc. 1904 : n. spp.

BOSTRYCHIDÆ.

- [Cf. FAUVEL (486), LESNE (876).]

LESNE gives addenda and corrigenda to his Palearctic *Bostrychidæ*, with 2 n. spp., ABEILLE, pp. 153–168, pls. iii, iv, Abeille xxx.

Catalogue of Australian *Bostr.* with localities, LEA, pp. 91-93, P. Linn. Soc. N. S. Wales xxix.

Apatodes Blackb. = (*Xylobosca* Lesne), LEA, p. 92, t. c.

Coccographis nigrorubra, pl. ix bis, fig. 6, p. 107, LESNE, Mission Pavie iii.

Lyctus canaliculatus, habits, parasites, BEYER, p. 30, J. N. York Ent. Soc. xii.

L. punctipennis, New Caledonia, Sumatra, FAUVEL, p. 155, Rev. Ent. franc. 1904, n. sp.

Sinoxylon pugnax, E. India etc., LESNE, p. 159, Abeille xxx, n. sp.

Xylogenes semenovi, Centr. Asia, LESNE, p. 158, t. c. n. sp.

CIOIDÆ.

Cherostus cornutus, St. Vincent, p. 31, *jamaicensis*, Jamaica, 32, ARROW, Ann. Nat. Hist. xiv, n. spp. [These Insects, as well as *Ithipidandrus*, are *Tenebrionidæ* and will in future be there recorded. D. S.]

Cis notatus, p. 160, *litteratus*, *biscutatus*, p. 161, *cribrellus*, *porcellus*, *micros*, p. 162, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, n. spp.

Ennearthron nigricans, New Caledonia, FAUVEL, p. 163, t. c. n. sp.

TENEBRIONIDÆ and RHYSOPAÜSSIDÆ.

[Cf. ARROW (39), BROUN (184), CHITTENDEN (266), DEMAISON (360), FAIRMAIRE (476), FAUVEL (486), GEBIEN (589, 590), KOLBE (830), MÜLLER (972), PÉRINGUEY (1028, 1029), POPPIUS (1094), REITTER (1155).]

Rhysopaüssidæ, note on position, WASMANN, p. 5, Jägerskiöld exp. No. 13.

Acanthomera cursor, Cape Colony, PÉRINGUEY, p. 252, Ann. S. African Mus. iii, n. sp.

Acastus seabakuensis, S. Africa, PÉRINGUEY, p. 260, t. c. n. sp.

Adelium pustulosum, New Caledonia, FAUVEL, p. 189, Rev. Ent. franc. 1904, n. sp.

Adesmia (Macropoda) khoikoina, damara, p. 226, *A. (Onymachrys) laskeri*, p. 227, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.

Akis spinosa var. n. *ragusa*, REITTER, p. 97, Natural. Sicil. xvii.

Alcyonotus purpuripennis, Cameroons, GEBIEN, p. 22, Arkiv Zool. ii, No. 5, n. sp.

Almyon prolatus Pasc. = (*Ghaleca læta* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.

Alphitophagus obtusangulus, Dalmatia, MÜLLER, p. 209, Munchen. Kol. Zeitschr. ii, n. sp.

Amenophis; table of species; *A. fairmairei* = (*mechowi* Kolbe), GEBIEN, p. 17, Arkiv Zool. ii, No. 5.

A. angustata, epipleuralis, Cameroons, GEBIEN, t. c. n. spp.

Ametrocera = (*Idricus* Fairm.), *A. aurita* = (*I. pacificus* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.

Amiantus pusillus, Transvaal, PÉRINGUEY, t. c. n. sp.

Anatolica hammarstromi, Mongolia, POPPIUS, p. 12, Ofv. Finska Forh. xlvi, No. 16, n. sp.

Ancephthalmus indigus, algoensis, p. 237, *plicipennis*, p. 238, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.

Anomalipus granatus Fairm. = (*marshalli* Pér.), *A. obscurus* Oliv. = (*notaticollis* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.

A. spectandus, p. 449, *deceptor*, *amplipennis, selatinus*, p. 450, Transvaal, PÉRINGUEY, Nov. Zool. xi; *A. mashumus*, pl. xiii, fig. 10, *gasanus*, fig. 9, p. 239, *barbertoniensis*, p. 240, *pauxillus, hypocrita*, p. 241, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : n. spp.

- Aphrotus* n. n. for *Xenus* Pér., *A. abortus* n. sp., Namaqualand, PÉRINGUEY, p. 252, t. c.
- Arrhenopluta* n. g. *ensifera* n. sp., New Caledonia, FAUVEL, p. 173, Rev. Ent. franc. 1904.
- Asemogena* n. g. near *Praogena*, *A. simplex*, p. 281, *humilis*, p. 282, n. spp., Cape Colony, PÉRINGUEY, Ann. S. African Mus. iii.
- Bolitotherus cordicollis*, p. 167, *cancroïdes*, p. 168, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, n. spp.
- Cædius globosus*, New Caledonia, FAUVEL, p. 166, t. c. n. sp.
- Calostega cylindrica*, Congo, GEBIEN, p. 175, Deutsche ent. Zeitschr. 1904, n. sp.
- Catamerus manicanus*, p. xiii, fig. 3, p. 250, *gasanus*, fig. 12, p. 251, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Ceramba* n. g. near *Episopus*, *hydrovatina* n. sp., New Caledonia, FAUVEL, p. 206, Rev. Ent. franc. 1904.
- Ceropria*; characters of African; *C. romandi* = (*janthina* Th. = *westermanni* Fahr. = *viridis* Kr.), *C. anthracina* Quedf. nec Lac., pl. ii, fig. 8, GEBIEN, pp. 9, 10, Arkiv Zool. ii, No. 5.
- C. cærulea*, New Caledonia, FAUVEL, p. 171, Rev. Ent. franc. 1904, n. sp.
- Cherostus* and *Rhipidandrus*, cf. *Cioidæ*.
- Cilibe asideformis*, New Caledonia, FAUVEL, p. 188, Rev. Ent. franc. 1904, n. sp.
- Cymba bavayi*, p. 194, *sulcipennis*, *muscorum*, p. 195, *indigacea*, *planipennis*, p. 196, New Caledonia, FAUVEL, t. c. n. spp.
- Derosinus* n. g. near *Adelostema*, *D. quadricollis* n. sp., Buenos Ayres, FAIRMAIRE, p. 62, Bull. Soc. ent. France 1904.
- Derosphærus globicollis* = (*Nyctobates rotundicollis* Westw. = *Notiolesthus morosus* Motsch.), GEBIEN, p. 18, Arkiv Zool. ii, No. 5.
- Diaclina picta*, New Caledonia, FAUVEL, p. 184, Rev. Ent. franc. 1904, n. sp.
- Dichastops mashunus*, S. Africa, PÉRINGUEY, p. 244, Ann. S. African Mus. iii, n. sp.
- Diestesoma* n. g. near *Strongylium*, p. 271, *D. pulchrum* n. sp., Cape Colony, p. 272, PÉRINGUEY, t. c.
- Dorelogena* n. g. near *Praogena*, *D. castanea*, p. 280, *angusta*, p. 281, n. spp., Rhodesia, PÉRINGUEY, t. c.
- Dysgena durbania*, p. 276, *decipiens*, *plebeia*, p. 277, *delagoana*, *foveaticollis*, p. 278, *capicola*, *luctuosa*, *servilis*, p. 279, S. Africa, PÉRINGUEY, t. c. n. spp.
- Endustomus sudanensis*, White Nile, WASMANN, pl. i, fig. 3, p. 10, Jägerskiöld exp. No. 13; *E. rhodesianus*, S. Africa, PÉRINGUEY, p. 242, Ann. S. African Mus. iii : n. spp.
- Epipedonota strigosicollis*, Catamarca, FAIRMAIRE, p. 63, Bull. Soc. ent. France 1904, n. sp.
- Episopus cavipennis*, p. 203, *championi*, *viridipennis*, p. 204, *violaceipennis*, p. 205, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, n. spp.
- Eupezus minor*, Cameroons, GEBIEN, p. 25, Arkiv Zool. ii, No. 5, n. sp.
- Gonocnemis jaegerskiöldi*, Soudan, WASMANN, p. 7, pl. i, fig. 2, Jägerskiöld exp. No. 13, n. sp.
- Hæmus* n. g. near *Machla*, p. 228, *H. carinatipennis* n. sp., Rhodesia, p. 229, PÉRINGUEY, Ann. S. African Mus. iii.
- Hemipristis krautzi*, Tanganyika, GEBIEN, p. 127, Deutsche ent. Zeitschr. 1904, n. sp.
- Herpiscius damarinus*, S. Africa, PÉRINGUEY, p. 229, Ann. S. African Mus. iii, n. sp.
- Hoplonyx evanescens*, pl. ii, fig. 5, p. 33, *cameruna*, p. 24, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5; *H. termitophilus*, Soudan, WASMANN, pl. i, fig. 7, p. 9, Jägerskiöld exp. No. 13; *H. insignis*, *granulipennis*, p. 255, *perforatus*, *extraneus*, p. 256, *gratulus*, *refertus*, p. 257, *pudens*,

- spectandus*, p. 258, *amœnus*, *probus*, p. 259, *luscus*, p. 260, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : n. spp.
- Hyocis championi*, New Caledonia and New Hebrides, FAUVEL, p. 166, Rev. Ent. franc. 1904, n. sp.
- Hypanarygmus* n. g. p. 27, *H. coccinelloides* n. sp. Cameroons, p. 28, pl. ii, fig. 6, GEBIEN, Arkiv Zool. ii, No. 5.
- Iscanus* n. g. near *Lorelus*, p. 176, *kuniensis* n. sp., New Caledonia, p. 177, FAUVEL, Rev. Ent. franc. 1904.
- Isopus kanak*, p. 198, *obtus*, p. 199, *productus*, p. 200, *apicipennis*, *sulcifer*, p. 201, *morychoïdes*, p. 202; New Caledonia, FAUVEL, t. c. n. spp.
- Latheticus prosopis*, Arizona etc., CHITTENDEN, p. 167, J. N. York Ent. Soc. xii, n. sp.
- Lorelus ocularis*, New Caledonia, FAUVEL, p. 178, Rev. Ent. franc. 1904, n. sp.
- Lyprochelida picta*, Cameroons, pl. ii, fig. 4, p. 20, GEBIEN, Arkiv Zool. ii, No. 5, n. sp.
- Lypros mosambicus*, *namaquensis*, S. Africa, PÉRINGUEY, p. 243, Ann. S. African Mus. iii, n. spp.
- Machla mendica* = (*Asida natalica* Pér. = *M. echinodermata* Fairm.), PÉRINGUEY, p. 296, t. c.
- Machleida nodulosa* = (*Asida legitima* Pér.), PÉRINGUEY, p. 296, t. c.
- Melasia apicipennis*, *fortestriata*, p. 180, *punctata*, *microcephala*, p. 181, *opacipennis*, *isoceroïdes*, p. 182, *miriceps*, p. 183, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, n. spp.
- Menephilus camerinus*, Africa, pl. ii, fig. 2, p. 19, GEBIEN, Arkiv Zool. ii, No. 5, n. sp.
- Metallonotus splendens*, E. Africa, GEBIEN, p. 318, Deutsche ent. Zeitschr. 1904, n. sp.
- Micrantereus capicola*, *procursus*, pl. xiii, figg. 1, 2, p. 245, *zoutpansbergianus*, fig. 8, p. 246, *lydenburgiensis*, fig. 7, *gasanus*, figg. 5, 6, p. 247, *hirsutus*, fig. 4, p. 248, *vicarius*, p. 249, fig. 3, S. Africa; PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Mimocellus* n. g. near *Lypros*, p. 11, *M. trechoïdes*, Sudan, pl. i, fig. 5, *braunsi*, Bothaville, n. spp., p. 12, WASMANN, Jägerskiöld exp. No. 13.
- Moluris mulleri*, to *Psammodes*, PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Nannocerus angustulus*, p. 270, *beiranus*, p. 271, Mozambique; PÉRINGUEY, t. c. n. spp.
- Nesogena caffra*, S. Africa, PÉRINGUEY, p. 262, t. c. n. sp.
- Nyctelia grandis*, *vageimpressa*, p. 62, *rotundipennis*, *quadriplicata*, p. 63, S. America, FAIRMAIRE, Bull. Soc. ent. France 1904, n. spp.
- Oochrotus glaber*, Asia Minor, DEMAISON, p. 287, Bull. Soc. ent. France 1904, n. sp.
- Opatrinus opacus*, Cameroons, fig. 2, p. 4, GEBIEN, Arkiv Zool. ii, No. 5, n. sp.
- Païta* n. g. near *Menimus*, *setosella* n. sp., Noumea, FAUVEL, p. 173, Rev. Ent. franc. 1904.
- Palorus laxipunctus*, New Caledonia, FAUVEL, p. 176, t. c. n. sp.
- Paragonocnemis trægaordhi*, Soudan, WASMANN, pl. i, fig. i, p. 8, Jägerskiöld exp. No. 13, n. sp.
- Paramarygmus figuratus*, Cameroons, GEBIEN, p. 28, Arkiv Zool. ii, No. 5; *P. gratulus*, *amœnus*, p. 261, *gratiosus*, p. 262, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : n. spp.
- Paraphylax sternalis*, New Zealand, BROWN, p. 57, Ann. Nat. Hist. xiv, n. sp.
- Perichilus ditissimus*, S. Africa, PÉRINGUEY, p. 270, Ann. S. African Mus. iii, n. sp.
- Phægonius giganteus*, Borneo, GEBIEN, p. 157, Deutsche ent. Zeitschr. 1904, n. sp.

- Phligra hamaticollis*, p. 235, *minuta*, p. 236, Cape Colony, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Phymatosoma rutilans*, Laos, FAIRMAIRE, p. 88, Mission Pavie iii, n. sp.
- Platynosum sabulorum*, characters, CHABAUT, p. 283, Bull. Soc. ent. France 1904.
- Platydemus tomentosus, nigrobrunneum*, p. 5, *hollmi*, fig. 3, p. 6, *schroderi*, fig. 4, p. 7, *abnorme*, fig. 5, p. 8, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5, n. spp.
- Praogena cyaneipennis*, p. 273, *ditissima, affinis*, p. 274, *natalensis, capicola, bechuana*, p. 275, *gloriosa, timida*, p. 276, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Priscoelium thomsoni*, GEBIEN, p. 148, Deutsche ent. Zeitschr. 1904, n. sp.
- Prosodes mithras*, Persia, REITTER, p. 258, Wien. ent. Zeit. xxiii, n. sp.
- Psammodius volvulus* = (*adventitus* Pér.), *P. valens* Pér. = (*cinctipennis* Fairm.), *P. rugulosus* Sol. = (*exilis* Pér.), *P. tricoloratus* Fahr. = (*praestans* Pér.), *P. junodi* Pér. = (*junodi* Fairm.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- P. discrepans*, p. 230, *dumarius, zoutpansbergianus*, pl. xiii, fig. 14, p. 231, *fartus*, p. 232, *illotus*, p. 233, S. Africa, PÉRINGUEY, t. c. : *P. rekbocki*, p. 299, *ertli*, p. 300, *spinosocostatus*, p. 302, Africa, KOLBE, Berlin. ent. Zeitschr. xlix : n. spp.
- Psectrascelis cariosicollis*, Catamarca, FAIRMAIRE, p. 64, Bull. Soc. ent. France 1904, n. sp.
- Pseudelops fossatus, remotus*, p. 191, *annulipes, macellus*, p. 192, *trapezus*, p. 193, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, n. spp.
- Pyncocerinii* ; revision of the group, GEBIEN, Deutsche ent. Zeitschr. 1904, pp. 101–176 and 305–356. For the synonymy and variation notes in this paper reference must be made to the memoir.
- Pyncocerus rugosus*, p. 343, *gracilis*, p. 344, W. Africa, GEBIEN, t. c. n. spp.
- Scythis rectangulus*, Mongolia, POPPIUS, p. 14, Ofv. Finska Forh. xlv, No. 16, n. sp.
- Selinus convexipennis*, fig. 1, p. 2, *calcaripes*, p. 3, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5, n. spp.
- Sipirocus kolbei*, Java, GEBIEN, p. 169, Deutsche ent. Zeitschr. 1904, n. sp.
- Sphenaria* synonymy, of Semenow's species, REITTER, pp. 24, 25, Wien. ent. Zeit. xxiii.
- Stenocura albicollis* = (*distincta* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
- S. jurgatrix*, Namaqualand, PÉRINGUEY, p. 227, t. c. n. sp.
- Strongylium sulcipenne* = (*Xanthotopia fuscocyanescens* Fairm.), PÉRINGUEY, p. 297, t. c. ; *S. cyanipes* = (*nigrum* Dohrn), GEBIEN, p. 29, Arkiv Zool. ii, No. 5.
- S. perturbator, indigenus*, p. 263, *rhodesianum, ovampoense*, p. 264, *lautum, discrepans*, p. 265, *algoense, imitator*, p. 266, *natalense*, p. 267, *auspicatum, plausibile*, p. 268, *laetum, caelatum*, p. 269, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Syrphetodes nodosalis*, New Zealand, BROWN, p. 56, Ann. Nat. Hist. xiv, n. sp.
- Taraxides sinuatus*, variation and synonymy, GEBIEN, p. 13, 14, Arkiv Zool. ii, No. 5.
- Tenebrio guineensis* = (*foveicollis* Thoms.), GEBIEN, p. 19, t. c.
- Toxicum taurus* = *tenuiclavum* Schauf. = ? *nitidifrons* Schauf.), GEBIEN, p. 13, t. c.
- Trachynotidius damarinus*, S. Africa, PÉRINGUEY, p. 233, Ann. S. African Mus. iii, n. sp.
- Trachynotidius rufizonatus* = (*manifestus* Pér.), PÉRINGUEY, p. 297, t. c.
- Trachynotus stali* = (*latemarginatus* Pér.), *T. silphoides* = (*plicipennis* Pér.), *T. pygmaeus* = (*tantillus* Pér.), *T. frontalis* Haag = (*Epairrops levigata* Pér.), PÉRINGUEY, t. c.

- T. resolutus*, Transvaal, PÉRINGUEY, p. 234, t. c. n. sp.
Uloa sjoestedti, Cameroons, fig. 6, p. 10, GEBLEN, Arkiv Zool. ii, No. 5, n. sp.
Vutsimus propinquus, p. 253, *byzacnoides*, p. 254, Transvaal, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
Xanthothoepeia delagoae, Mozambique, PÉRINGUEY, p. 273, t. c. n. sp.
Xyloborus crenipennis Motsch. to *Cherostus*, ARROW, Ann. Nat. Hist. xiv, p. 32.
Zophodes tristis=(*Doryagus talpa* Pasc.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.

CISTELIDÆ.

[Cf. GERHARDT (591, 592), PIC (1058, 1065, 1075).]

- Isomira murina* var. n. *emilia*, BEDEL, p. 211, Bull. Soc. ent. France 1904.
I. arenaria, Germany, GERHARDT, p. 366, Deutsche ent. Zeitschr. 1904, and p. 79, Zeitschr. Ent. Breslau xxix; *I. testaceicornis*, Vladivostock, PIC, p. 26, Echange 1904 : n. spp.
Ctenopus, sulphureus L.=(*flavus* Scop.), BEDEL, p. 152, Abeille xxx.
C. tokatensis, Tokat, PIC, p. 26, Echange 1904, n. sp.
Microcistela n. g. *M. rosine* n. sp., Amurland, PIC, p. 26, t. c.
Mycetochara (*Ernocharis*) *striatipennis*, Amanus, PIC, p. 74, t. c. n. sp.
Prionychus nitidissimus, Tokat, PIC, p. 288, Bull. Soc. ent. France 1904, n. sp.

MEIANDRYIDÆ and LAGRIIDÆ.

- Orchesia fusiformis*=(*nadeshda* Sem.), SEMENOW, p. 315, Rev. Russe Ent. 1904.
Lagria procera, p. 287, *prædita*, *pustulosa*, p. 288, *mashuna*, *rhodesiana*, p. 289, *imitatrix*, p. 290, *lydenburgiana*, *promontorii*, p. 291, *vittatipennis*, p. 292, *capicola*, *elizabethæ*, p. 293, *plumbea*, *impressicollis*, p. 294, *annectens*, p. 295, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.

ANTHICIDÆ, PEDILIDÆ.

- [Cf. CASEY (248), PIC (1053, 1054, 1057, 1060, 1062, 1064, 1068, 1070, 1075, 1076, 1078).]
Anthicus ragazzii var. n. *micheli*, PIC, p. 121, Bull. Mus. Paris 1904.
A. tarifanus, Spain, PIC, p. 4, Echange 1904; *A. escaleraï*, *uhagoni*, Spain, *balearicus*, Balearic Ids., PIC, p. 81, t. c.; *A. boyadjeani*, p. 73, *tauricus*, p. 74, Asia Minor, PIC, t. c.; *A. (Aulacoderus) citernii*, Somali Land, PIC, p. 92, Ann. Mus. Genova xli; *A. basinotatus*, *tuberculatus*, *cæruleipennis*, S. Africa, PIC, p. 12, Echange 1904; *A. floridanus*, *plectrinus*, N. America, CASEY, p. 320, Canad. Ent. xxxvi; *A. chevalieri*, Niger, *guyanensis*, French Guiana; PIC, p. 121, Bull. Mus. Paris 1904; *A. (Lappus) postobscurus*, *goyasensis*, *A. (Acanthinus) minasensis*, p. 44, *A. sculptus*, *bicallosus*, *finitimus*, p. 45, Brazil, PIC, Echange xx; *A. decerptus*, Buenos Ayres, PIC, p. 118, Bull. Soc. ent. France 1904 : n. spp.
Euvacus n. g. p. 318, *E. coloradanus* n. sp., Colorado, p. 319, CASEY, Canad. Ent. xxxvi.
Formicomus fortipes var. n. *anguliceps*, PIC, p. 119, Bull. Mus. Paris 1904; *F. elegans*, *posticalis* and *obliquifasciatus* to *Anthicus*, LEA, p. 95, P. Linn. Soc. N. S. Wales xxix.
F. armipes, *decorsei*, Madagascar, *potteri*, Abyssinia, PIC, p. 120, Bull. Mus. Paris 1904, n. spp.

- Hylophilus*; this name cannot be used for *Col.*, CHAMPION, p. 85, Ent. Mag. xl.
H. grandis, S. Africa, PIC, p. 12, Echange 1904; *H. angusticollis, decorsei*, Madagascar, PIC, p. 72, Bull. Soc. ent. France 1904 : **n. spp.**
Leptoremus n. g. p. 314, *L. argenteus n. sp.*, California, p. 315, CASEY, Canad. Ent. xxxvi.
Liobauius n. g. p. 316, *L. subtropicus, lulingensis, spectans*, p. 317, Texas, *frontalis*, Mexico, p. 318, **n. spp.**, CASEY, t. c.
Macratriu decorsei, Madagascar, PIC, p. 119, Bull. Mus. Paris 1904, **n. sp.**
Notoxus oneili, Cape Colony, PIC, p. 35, Echange 1905; *N. peruvianus*, Peru, PIC, p. 228, Bull. Mus. Paris 1904 : **n. spp.**
Scraptia chinensis, Tien-tsin, PIC, p. 20, Echange 1904, **n. sp.**

RHIPIPHORIDÆ and STYLOPIDÆ.

- [Cf. BROWN (184), CHOBOUT (269), FAIRMAIRE (478), LEA (864), PIC (1074, 1077), PIERCE (1086).]
Ancholenus acuminatus, Brazil, FAIRMAIRE, p. 155, Bull. Soc. ent. France 1904, **n. sp.**
Blattivorus n. g. (?) for *Rhipidius lusitanicus*, CHOBOUT, p. 230, Bull. Soc. ent. France 1904.
Dunbrodianus n. g. near *Euctenia*, *D. longicollis n. sp.*, Cape Colony, PIC, p. 66, Echange xx.
Emenadia pictipennis, Queensland, *semipunctata*, N. W. Australia, LEA, p. 97, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
Evanicocera pallidipennis, N. W. Australia, LEA, p. 99, t. c. **n. sp.**
Myiodes syriacus, Amanus, PIC, p. 90, Echange xx, **n. sp.**
Myiodites, characters of N. American, pp. 157–162, *fasciatus* var. *n. brunneus*, p. 160, *solidaginis*, natural history, pp. 172–180, PIERCE, Stud. Univ. Nebraska iv.
M. minimus, Nebraska, id., p. 159, t. c. **n. sp.**
Rhipidius; table of species, CHOBOUT, p. 230, Bull. Soc. ent. France 1904.
R. quignoti, Alpes maritimes, CHOBOUT, p. 228 & p. 284, t. c. **n. sp.**
Rhipiphorus; table of North American, PIERCE, p. 164, Stud. Univ. Nebraska iv.
R. acutipennis, Nebraska, PIERCE, p. 163, t. c. **n. sp.**
Rhy pistena cryptarthra, p. 58, *sulciceps*, p. 59, New Zealand, BROWN, Ann. Nat. Hist. xiv, **n. spp.**
Xenos ?, from *Andrenu*, p. 169, *X. pulvinipes*, from *Panurginus*, Nebraska, PIERCE, p. 167, Stud. Univ. Nebraska iv, **n. sp.**
The triunguloids—first larva—of *Rhip.* and *Stylop.*, PIERCE, pp. 170 etc., t. c.

MORDELLIDÆ.

- Mordella*; variation of Australian, LEA, pp. 95, 96, P. Linn. Soc. N. S. Wales xxix.
Mordellistena arabica, Mazerah, CHOBOUT, p. 244, Bull. Soc. ent. France 1904, **n. sp.**

CANTHARIDÆ or MELOIDÆ.

- [Cf. ESCHERICH (469), PÉRINGUEY (1028), PIERCE (1086), SKINNER (1302).]
Life-histories and peculiarities of *Meloide*, North American triungulins, PIERCE, pp. 154, 170 etc., Stud. Univ. Nebraska iv.
Embryology of *Meloë*, CZERSKI (340).
Calospasta wenzeli, Arizona, SKINNER, p. 217, Ent. News Philad. xv, **n. sp.**

- Ctenopus lama*, East Turkestan, ESCHERICH, p. 35, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Decatoma vexator, transvaalica*, Transvaal, PÉRINGUEY, p. 284, Ann. S. African Mus. iii, **n. spp.**
- Epicausta adpersa*, injurious in Argentina, BRÈTHES (182).
- E. abaddon, alastor*, Arizona, SKINNER, p. 217, Ent. News Philad. xv, **n. spp.**
- Hapalus (Stenoria) hauseri*, p. 34, *tibetana*, Kuku-noor, *H. (Sitaris) pallens*, p. 35, Turkestan, ESCHERICH, Munchen. Kol. Zeitschr. ii, **n. spp.**
- Lagorina (?) mus*, Algeria, ESCHERICH, p. 32, t. c. **n. sp.**
- Lytta pæcioloptera* var. *n. satjata*, ESCHERICH, p. 31, t. c.
- L. tibetana*, Kuku-noor, ESCHERICH, p. 30, t. c.; *L. damarina, spilotella*, S. Africa, PÉRINGUEY, p. 286, Ann. S. African Mus. iii : **n. spp.**
- Meloe intermedius*, Turkestan, ESCHERICH, p. 30, Munchen. Kol. Zeitschr. ii; *M. rhodesianus*, S. Africa, PÉRINGUEY, p. 282, Ann. S. African Mus. iii : **n. spp.**
- Mylabris cruz* var. *n., opulenta*, ESCHERICH, p. 33, Munchen. Kol. Zeitschr. ii.
- M. lucens*, p. 32, *voigtsii*, p. 33, *aurora*, p. 34, Turkestan, ESCHERICH, t. c.; *M. (Ceroctis) mosambica*, Lourenço-Marques, PÉRINGUEY, p. 283, Ann. S. African Mus. iii : **n. spp.**
- Paractenodia n. g.* near *Actenodia, P. parva n. sp.*, Cape Colony, PÉRINGUEY, p. 285, Ann. S. African Mus. iii.

ÆGIALITIDÆ, PYROCHROIDÆ, PYTHIDÆ, ŒDEMERIDÆ.

- Ægialitidæ*; validity and position of the family, structure of prosternum, WICKHAM, pp. 356, 357, cuts, Canad. Ent. xxxvi.
- Ægialites*; early stages, taxonomy, WICKHAM, pp. 57–60, pl. ii, t. c.
- Pyrochroa innoraticeps*, Amurland, PIC, p. 26, Echange 1904, **n. sp.**
- Rhinosimus ceneus numidica* subsp. *n.*, PIC, p. 10, t. c.
- Salpingus distincticollis, bisbimaculatus*, Madagascar, PIC, p. 72, Bull. Soc. ent. France 1904, **n. spp.**
- Salpingus oneili*, Cape Colony, PIC, p. 35, Echange 1904, **n. sp.**
- Chrysanthia distinctithorax*, Taurus, PIC, p. 57, t. c. **n. sp.**
- Danercus bicolor*, Queensland, LEA, p. 100, pl. iv, fig. 11, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Œdemera hispanica*, Grenada, PIC, p. 91, Echange xx, **n. sp.**
- Sora* Walker (1859) is prior to *Sora* Hein., PROUT, p. 115, Entomologist 1904.

CURCULIONIDÆ.

- [Cf. ABEILLE (5), BEDEL (97), BEGUIN-BILLECOCQ (98), BROUN (184), CASEY (248), CHAMPION (614), CHITTENDEN (263, 264), CSIKI (329), DANIEL & DANIEL (349), DESBROCHERS (361–365, 367), ENDERLEIN (460), FAIRMAIRE (473), FAUST (481), FORMÁNEK (533, 534), FROGGATT (561), GIRAULT (610), HARTMANN (663), HELLER (674, 675), LEA (862, 864), MARSHALL (915), MCCLENAHAN (930), PETRI (1035–1037), PIC (1060, 1065, 1071, 1076, 1077, 1079), REITTER (1148, 1150, 1152), SCHAEFFER (1220), SCHULTZE (1252), SOLARI (1326), WAGNER (1462).]

Development of rostrum, *Balaninus* and *Mononychus*, MCCLENAHAN (930).
VITALE continues his account of protective resemblance in *Curculionidæ*, Riv. ital. Sci. Nat. xxiv, pp. 141–145.

- Acalles italicus*, Campobasso, p. 529, *lusitanicus*, Portugal, p. 530, SOLARI, Ann. Mus. Genova xli, **n. spp.**
- Acalyptops n. g. Anthonomorum*, p. 400, *A. ornatus n. sp.*, Usambara, p. 401, HARTMANN, Deutsche ent. Zeitschr. 1904.

- Acherres globicollis*, W. Australia, LEA, p. 114, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Adosomus* n. g. pp. 188, 236, for *samsonovi* Gebl. etc., FAUST, Deutsche ent. Zeitschr. 1904.
- Ædriodes humeralis*, W. Australia, LEA, p. 113, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Alcides interruptus bilineellus* subsp. n., HELLER, p. 186, Ent. Tidskr. xxv.
- A. albopictus*, Madagascar, FAIRMAIRE, p. 247, Ann. Soc. ent. Belgique xlviii, n. sp.
- Amblysomus* n. g. pp. 185, 204, for *brevis* Fahr., FAUST, Deutsche ent. Zeitschr. 1904.
- Amycterides*; notes on types and synonymy of Macleay's species, LEA, pp. 111–113, Tr. R. Soc. S. Austral. xxviii.
- Anasticomerus* subg. n., cf. *Ischnotrachelus*.
- Anthonomus grandis*, natural history, SANDERSON, Texas Agric. exp. Stat. Circ. 3; *A. grandis*, in Cuba, food-plant, SCHWARZ, pp. 13–17, P. ent. Soc. Washington vi.
- A. brevispinus*, Araxes Valley, p. 139, *latior*, Siberia, p. 140, PIC, Bull. Soc. Autun xv, n. spp.
- Aphanomastix* n. g. *Sphenophoridarum*, p. 196, *A. cryptophodus* n. sp., Cameroons, p. 197, HELLER, Ent. Tidskr. xxv.
- Aphyomerus* n. g. *Menemachinorum*, *A. obliquus* n. sp., E. Africa, HARTMANN, p. 409, Deutsche ent. Zeitschr. 1901.
- Apion*; food plants of 12 species, WAGNER, pp. 378, 379, Munchen. Kol. Zeitschr. ii; *A. hydropicum*, identification, DANIEL, pp. 182–184, Munchen. Kol. Zeitschr. ii; *A. subcariceps*, characters, p. 108, *subconiceps* var. n. *tenuirostre*, p. 109, DESBROCHERS, Frelon xii.
- A. (Ceratapion) austriacum*, Mödling, p. 374, *woerzi*, p. 377, *moczarskii*, p. 378, Corfu, WAGNER, Munchen. Kol. Zeitschr. ii; *A. garoyi*, France, p. 53, *vincenti*, Cairo, *semicyanescens*, Turkestan, p. 54, *foveatum*, Caucasus, *approximatum*, Morocco, p. 55, *rectinasus*, S. France, p. 56, *italicum*, Piedmont, *subconiceps*, Carcassonne, p. 57, DESBROCHERS, Frelon xii; *A. subplumbeum*, Arabia, DESBROCHERS, p. 108, t. c.; *A. tropicum*, p. 392, *kwaïense*, p. 393, *sulcatipenne*, p. 394, *vetulum*, *amabile*, p. 395, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904; *A. (Aspidapion) alluaudi*, *bouvieri*, p. 54, *malgasicum*, p. 55, *bicarinatum*, *denudatum*, p. 56, *madagascariense*, *inornatum*, p. 57, Madagascar, *pamanzianum*, Mayotte, p. 56, *A. insulam*, *albosquamosum*, p. 103, Madagascar, BEGUIN-BILLECOCQ, Bull. Soc. ent. France 1904 : n. spp.
- Aporotopus* n. g. p. 190, for *Pachycerus cribrosus* Fairm., FAUST, Deutsche ent. Zeitschr. 1904.
- Apsophus* n. g. *Menemachinorum*, p. 407, *fasciatus*, p. 408, n. sp., E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Asinocleonus* subg. n. of *Pachycerus*, FAUST, p. 224, Deutsche ent. Zeitschr. 1904.
- Astratus* n. g. near *Cryptorhynchus*, *A. cristulicollis* n. sp., Madagascar, FAIRMAIRE, p. 249, Ann. Soc. ent. Belgique xlviii.
- Atactogaster* n. g. p. 230, with *insularis*, Zanzibar, *suspectus*, *finitimus*, Madras, p. 251, n. spp., FAUST, Deutsche ent. Zeitschr. 1904.
- Attelabus bipustulatus*, habits, GIRAULT, pp. 189–193, Ent. News Philad. xv.
- Beosomus* n. g. near *Bantiades*, p. 118, for *B. tucitus* n. sp., New Zealand, p. 119, BROWN, Ann. Nat. Hist. xiv.
- Bagous longirostris*, Sicily, VITALE, Riv. Col. ital. i [not seen by Recorder]; *B. latepunctatus*, p. 50, *bagdatensis*, p. 51, Bagdad, PIC, Echange xx; *B. striatulus*, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *B. fustus*, E. Africa, HARTMANN, p. 391, Deutsche ent. Zeitschr. 1904 : n. spp.

- Balaninus*; natural history of N. American, CHITTENDEN, pp. 24-38, Bull. U. S. Dep. Agric. Ent. xlv.
- B. intricatus*, *æqualis*, p. 133, *delicatulus*, *submaculatus*, p. 134, Australia, LEA, Tr. R. Soc. S. Austral. xxviii; *B. victoriensis*, Texas, CHITTENDEN, p. 31, Bull. U. S. Dep. Agric. Ent. xlv: **n. spp.**
- Baris* spp.; metamorphosis, XAMBEU, pp. 213, 223, Naturaliste 1904.
- B. corsicana*, Bastia, p. 36, *mauretanica*, Algeria, p. 37, SCHULTZE, Munchen. Kol. Zeitschr. ii; *B. rufescens*, p. 532, *violaceomicans*, p. 534, Moldavia, SOLARI, Ann. Mus. Genova xli; *B. minima*, E. Africa, HARTMANN, p. 414, Deutsche ent. Zeitschr. 1904; *B. distinguenda*, Madagascar, FAIRMAIRE, p. 251, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Barypithes*; characters and composition, FORMÁNEK, pp. 16, 151-173, Munchen. Kol. Zeitschr. ii.
- B. maritimus*, Basses Alpes, FORMÁNEK, p. 297, t. c. **n. sp.**
- Belus centralis* = (*granulatus* Lea), LEA, p. 132, Tr. R. Soc. S. Austral. xxviii.
- Blosyrus haroldi*, Usambara, HARTMANN, p. 369, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Bothynoderes tekkensis*, *absolutus*, no locality, p. 211, *kahirinus*, Cairo, p. 212, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Brachycleonus* **n. g.** pp. 190, 237, for *fronto* Fisch., FAUST, Deutsche ent. Zeitschr. 1904.
- Brachyderes incanus*, natural history, metamorphosis, JACOBI (737).
- Broconius* **n. g.** for part of *Lixus*, DESBROCHERS, p. 92, Frelon xii.
- Bryocheta suberuciata* = (*palliat* Pasc.), *sulcipennis* Th. = (*sufflata* Pasc.), *nigrita* Chev. = (*viridis* Pasc.), HELLER, pp. 181, 182, Ent. Tidskr. xxv.
- B. sellata*, *apicalis*, p. 183, *sjostedti*, p. 184, Cameroons, id. t. c. **n. spp.**
- Cænopsis maroccana*, Tangier, SOLARI, p. 525, Ann. Mus. Genova xli, **n. sp.**
- Calodemus* **n. g.** pp. 185, 233, *C. vetustum*, *pullum*, *biguttatum*, p. 233, *puberulum*, *invidum*, p. 234, **n. spp.**, Africa, FAUST, Deutsche ent. Zeitschr. 1904.
- Cathormiocerus ragusai*, Sicily, VITALE, Riv. Col. ital. ii? p. 125 [not seen by Recorder]; *C. semidepressus*, p. 92, *vaulogeri*, p. 93, Algeria, PIC, Echange xx: **n. spp.**
- Catoptes vevator*, p. 108, *egens*, p. 109, *duplex*, p. 110, New Zealand, BROWN, Ann. Nat. Hist. xiv, **n. spp.**
- Cecyropa alternata*, p. 105, *discors*, p. 106, New Zealand, BROWN, t. c. **n. spp.**
- Centrinus lineellus*, Guatemalan not N. American, CASEY, p. 324, Canad. Ent. xxxvi.
- Centorrhynchus albolimbatus*, Tunis, *laborensis*, Algeria, PIC, p. 93, Echange xx, **n. spp.**
- Cherocephalus hyperoides*, p. 99, *siculus*, p. 100, Sicily, RAGUSA, Natural. Sicil. xvii; *C. grandis*, Algeria, PIC, p. 92, Echange xx: **n. spp.**
- Cherodrys pictus* St. = (*crelius* Pic), REITTER, p. 83, Wien. ent. Zeit. xxiii; *C. manteroi* ♂, SOLARI, p. 536, Ann. Mus. Genova xli.
- Chalcodermus dentiferus*, pl. xvii, fig. 2, p. 317, *angulicollis*, fig. 4, p. 319, *calidus*, fig. 5, p. 320, *longirostris*, fig. 11, *serripes*, fig. 12, p. 325, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4; *C. aeneus*, natural history, CHITTENDEN, pp. 39-43, Bull. U. S. Dep. Agric. Ent. xlv.
- C. semicostatus*, Texas, SCHAEFFER, p. 232, J. N. York Ent. Soc. xii; *C. nigroaeneus*, *cupreipes*, p. 318, *angularis*, p. 319, pl. xvii, fig. 3, *dentipes*, fig. 6, *foveolatus*, fig. 7, p. 321, *variolosus*, *curvipes*, fig. 8, p. 322, *lineatus*, fig. 9, *radiatus*, p. 323, *vittatus*, *mexicanus*, fig. 10, p. 324, *crassipes*, fig. 13, p. 325, Central America, CHAMPION, t. c. **n. spp.**
- Chaunoderus sternalis*, p. 381, *apicalis*, p. 382, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**

- Chromosomus schach*, Persia, *ostentatus*, Turcomania, FAUST, p. 208, Deutsche ent. Zeitschr. 1904, n. spp.
- Chrysolophus spectabilis*, variation, LEA, p. 102, P. Linn. Soc. N. S. Wales xxix.
- C. foveatus*, N. S. W., LEA, p. 101, t. c. n. sp.
- Cionellus* subg. n., cf. *Cionus*.
- Cionus*; table of Palearctic with numerous varr. n., also p. 63, *Cionellus* subg. n. for *C. gibbifrons*, REITTER, Wien. ent. Zeit. xxiii, pp. 47-64; *C. fraxini* var. *attica*, PIC, p. 50, Echange xx; *C. obscurus* Reitt. = (*flavoguttatus* Stierl.), REITTER, p. 259, Wien. ent. Zeit. xxiii.
- C. schultzei*, Greece, p. 50, *subalpinus*, Alps, p. 54, *helleri*, Japan, p. 56, REITTER, Wien. ent. Zeit. xxiii; *C. elegantulus*, Madagascar, FAIRMAIRE, p. 251, Ann. Soc. ent. Belgique xlviii: n. spp.
- Cleogonus armatus*, Mexico-Colombia, p. 315, pl. xvii, fig. 1, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4, n. sp.
- Cleonides*; a revision of this group by the late Herr J. Faust is published, Deutsche ent. Zeitschr. 1904, pp. 177-302. It is accompanied by a catalogue and we give therefore only the new genera and species.
- Cleonus varquesi*, Toledo, DESBROCHERS, p. 106, Frelon xii; *C. japonicus*, Japan, FAUST, p. 237, Deutsche ent. Zeitschr. 1904: n. spp.
- Clypeorhynchus inophloeoides*, New Zealand, BROUN, p. 117, Ann. Nat. Hist. xiv, n. sp.
- Cnemodontus ambitosus, natalensis*, S. Africa, FAUST, p. 199, Deutsche ent. Zeitschr. 1904, n. spp.
- Cneorhinus depilatus*, Tunis, DESBROCHERS, p. 105, Frelon xii, n. sp.
- Cænopismorphus tenietensis*, Tunis, *desbrochersi*, Algeria, PIC, p. 91, Echange xx, n. spp.
- Conapion constricticolle*, p. 396, *cognatum*, p. 397, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, n. spp.
- Conorhynchus luigioni*, Rome, SOLARI, p. 528, Ann. Mus. Genova xli; *Conorhynchus, globifrons, arduus*, Mongolia, p. 214, *acentatus*, Kirghisia, p. 215, FAUST, Deutsche ent. Zeitschr. 1904: n. spp.
- Conotrachelus inexplicatus* Faust, pl. xviii, fig. 28, p. 360, *signatus* Kirsch, fig. 30, p. 361, *cristatus* Fahr., pl. xix, fig. 9, p. 375, *dentiferus* Fahr., fig. 11, p. 376, *cestrotus* Faust, fig. 26, p. 388, *leucophæatus* Fahr. = (*demens* Boh.), pl. xx, fig. 5, p. 394, *subfasciatus* Boh., fig. 27, p. 413, *anaglypticus* Say, pl. xxi, fig. 5, p. 420, *humerosus* Fahr., fig. 11, p. 425, *scapularis* Fahr., fig. 16, p. 430, *serpentinus* Boh., fig. 19, p. 433, *sobrinus* Boh., fig. 22, p. 435, *verticalis* Boh., fig. 25, p. 439, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4.
- C. quadridens*, pl. xviii, fig. 1, p. 343, *inæquidens*, fig. 2, *tridens*, fig. 3, p. 344, *serratidens*, fig. 4, *truncatidens*, fig. 5, p. 345, *tetrastigma*, figg. 6, 7, p. 346, *rectirostris*, fig. 8, *fulvescens*, fig. 9, p. 347, *latidens*, fig. 10, *varicolor*, fig. 11, p. 348, *oculatus*, fig. 12, *triannulatus*, p. 349, *squamulatus*, fig. 13, *armatus*, p. 350, *lævirostris*, fig. 14, *flexuosus*, fig. 15, p. 351, *fulvomaculatus*, fig. 16, *robustus*, p. 352, *longipennis*, fig. 17, *rugulosus*, fig. 18, p. 353, *rugiventris*, fig. 19, *longirostris*, fig. 20, p. 354, *latefasciatus, squamosus*, fig. 21, p. 355, *glabriventris, anthonomoides*, fig. 22, p. 356, *subulatus*, fig. 23, *brevicollis*, fig. 24, p. 357, *alboplagiatus*, fig. 25, p. 358, *albosignatus*, fig. 26, *curvidens*, fig. 27, p. 359, *quadripustulatus*, fig. 29, p. 360, *cribratus*, p. 361, *impressicollis, brevirostris*, pl. xix, fig. 1, p. 362, *flavibasis*, fig. 2, p. 363, *foveicollis*, fig. 3, *griseus*, p. 364, *unidentatus, fasciculatus*, p. 365, *picticollis*, fig. 4, *lineatipes*, p. 366, *multiguttatus, curtirostris*, p. 367, *rufitarsis, sinuaticollis*, fig. 5, p. 368, *germanus, nigricans*, p. 369, *fulvopictus, flavangulus*, p. 370, *annulipes, duplicatus*, p. 372, *bispinis*, fig. 6, *mixtus*, fig. 7, p. 373, *continuus, bilineatus*, fig. 8, p. 374, *divirgatus*, fig. 10, p. 375, *venustus*, fig. 12, p. 376, *albolineatus*, fig. 13, *eburneus*, fig. 14, p. 377, *albinus*, fig. 15,

- p. 378, *sellatus*, *curvilineatus*, fig. 16, p. 379, *minutus*, *dimidiatus*, p. 380, *deplanatus*, fig. 17, *præstans*, fig. 18, p. 381, *trilineatus*, fig. 19, p. 382, *nodulosus*, *discifer*, fig. 20, p. 383, *corallinus*, fig. 21, p. 384, *striatirostris*, *crenatus*, p. 385, *quadrinodosus*, fig. 22, *gibbipennis*, fig. 23, p. 386, *hybophorus*, fig. 24, *cærulescens*, fig. 25, p. 387, *spinifer*, fig. 27, p. 388, *reticulatus*, fig. 28, p. 389, *piliventris*, fig. 29, *granulicollis*, fig. 30, p. 390, *unifasciatus*, pl. xx, fig. 1, *albofasciatus*, fig. 2, p. 391, *vittaticollis*, fig. 3, *megalops*, fig. 4, p. 392, *constrictus*, *sextuberculatus*, p. 393, *umbrosus*, p. 394, *canaliculatus*, *opacus*, pl. xx, fig. 6, p. 395, *arachnoides*, fig. 7, *albifrons*, fig. 8, p. 396, *cordatus*, fig. 9, p. 397, *gibbistrostris*, fig. 10, *excavatus*, p. 398, *sulcicollis*, *cavicus*, fig. 11, p. 399, *fulvibasis*, *rufescens*, p. 400, *nemorivagus*, *divisus*, fig. 12, p. 401, *obliquelineatus*, fig. 13, *brevisetis*, fig. 14, p. 402, *squamifrons*, fig. 15, p. 403, *suturalis*, fig. 16, *albopictus*, fig. 17, p. 404, *scoparius*, fig. 18, *lobatus*, fig. 19, p. 405, *compressus*, fig. 20, *rubidus*, fig. 21, p. 406, *isthmicus*, p. 407, *fulvolineatus*, *silvicola*, p. 408, *uncifer*, fig. 22, *lineatus*, p. 409, *parvulus*, *adustus*, fig. 23, p. 410, *candidus*, fig. 24, *farinosus*, p. 411, *parvicollis*, *crucifer*, fig. 25, p. 412, *cinerascens*, fig. 26, p. 413, *semirufus*, fig. 28, p. 414, *dilatirostris*, fig. 29, *sinuatocostatus*, p. 415, *segregatus*, *latirostris*, fig. 31, p. 416, *nodifer*, pl. xxi, fig. 1, p. 417, *elongatus*, fig. 2, p. 418, *hystricosus*, fig. 3, *bicarinatus*, fig. 4, p. 419, *insularis*, fig. 6, *tuberculatus*, fig. 7, p. 421, *quadrilineatus*, fig. 8, p. 422, *mexicanus*, fig. 9, *ramifer*, p. 423, *punctiventris*, *uniformis*, fig. 10, p. 424, *nodifrons*, p. 425, *ovalis*, *alternans*, p. 426, *validus*, fig. 12, *lateralis*, fig. 13, p. 427, *longidens*, fig. 14, p. 428, *dentimanus*, fig. 15, *tenuipes*, p. 429, *aristatus*, fig. 17, p. 430, *curtus*, *paleatus*, p. 431, *guatemalensis*, *conicicollis*, fig. 18, p. 432, *incanus*, fig. 20, *sulcipectus*, *spinipennis*, fig. 21, p. 434, *glabricollis*, *ciliatus*, fig. 23, p. 436, *sublineatus*, *tabogensis*, p. 437, *cucullatus*, *insignis*, *angusticollis*, p. 438, *curvimanus*, fig. 24, p. 439, *rufifrons*, *planifrons*, p. 440, Central America, CHAMPION, t. c.; *C. rubescens*, Texas, SCHAEFFER, p. 232, J. N. York Ent. Soc. xii : n. spp.
- Copturus* (*Eucopturus*) *papei*, p. 292, *spinithorax*, p. 293, Brazil, HELLER, Ann. Soc. ent. Belgique xlviii, n. spp.
- Cosmogaster* n. g. pp. 185 & 230, for *lateralis* Gyll., etc., FAUST, Deutsche ent. Zeitschr. 1904.
- Cossonidæ* of Sicily, VITALE, Natural. Sicil. xvi & xvii, pp. 14 & 26-41.
- Cossonus camerunus*, Cameroons, HELLER, p. 200, Ent. Tidskr. xxv; *C. corvinus*, p. 418, *brevinasus*, p. 419, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904 : n. spp.
- Crisius dorsalis*, New Zealand, BROWN, p. 123, Ann. Nat. Hist. xiv, n. sp.
- Cyclobarus foveicollis*, Algeria, DESBROCHERS, p. 59, Frelon xii, n. sp.
- Cyclomaurus subfuscus*, Algeria, PIC, p. 91, Echange xx, n. sp.
- Cylindrocopturus* (= *Copturodes* Cas.), CASEY, p. 324, Canad. Ent. xxxvi.
- Degorsia*, cf. *Stenopelmus*.
- Derelomus fasciatus*, p. 406, *pallidus*, p. 407, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, n. spp.
- Desmidophorus galericulus* (= *centralis* Fairm.), FAIRMAIRE, p. 247, Ann. Soc. ent. Belgique lxviii.
- D. griseipes*, Madagascar, id. l. c., n. sp.
- Dicasticus lateralis*, Usambara, HARTMANN, p. 375, Deutsche ent. Zeitschr. 1904, n. sp.
- Dichelotrox* n. g. *Zygopidarum*, p. 193, *D. bimbianus* n. sp., Cameroons, p. 194, HELLER, Ent. Tidskr. xxv.
- Dichthorrhinus albozebrinus*, Madagascar, FAIRMAIRE, p. 252, Ann. Soc. ent. Belgique xlviii, n. sp.
- Dicranotropis* n. g. pp. 186, 203, for *hieroglyphicus* Ol. and *ganglbaueri* n. sp., Persia, p. 203, FAUST, Deutsche ent. Zeitschr. 1904.

- Dinocleus porcatus*, p. 321, *interruptus*, Utah, *mexicanus*, Guerrero, p. 322, CASEY, Canad. Ent. xxxvi, n. spp.
- Dinosius* n. g. near *Mitophorus*, *D. asperipennis* n. sp., Madagascar, FAIRMAIRE, p. 238, Ann. Soc. ent. Belgique xlviii.
- Echinocnemus gracilirostris*, Madagascar, FAIRMAIRE, p. 241, t. c. n. sp.
- Ectemnorhinus richtersi*, p. 673, *crozetensis*, p. 674, Crozet islds., ENDERLEIN, Zool. Anz. xxvii, n. spp.
- Ellimenistes amenus*, Usambara, HARTMANN, p. 386, Deutsche ent. Zeitschr. 1904, n. sp.
- Elytrodon dilaticollis*, Cérigo, PIC, p. 10, Echange 1904; *E. ferox*, Asia Minor, K. DANIEL, p. 82, Munchen. Kol. Zeitschr. ii : n. spp.
- Engallus galactoderus*, Madagascar, FAIRMAIRE, p. 239, Ann. Soc. ent. Belgique xlviii, n. sp.
- Ephimeronotus* n. g. pp. 187, 234, for *miegi* Fairm., FAUST, Deutsche ent. Zeitschr. 1904.
- Epilectus* n. n. for *Exochus* Chev., FAUST, p. 208, t. c.
- Epiphyllax apicalis* Fairm. to *Metialma*, FAIRMAIRE, p. 248, Ann. Soc. ent. Belgique xlviii.
- Epirhynchus humerosus*, Cape Good Hope, FAUST, p. 221, Deutsche ent. Zeitschr. 1904, n. sp.
- Essolithna* and *Pephricus*, synonyms, LEA, p. 94, Tr. R. Soc. S. Austral. xxviii.
- Essolithna fissiceps*, *militaris*, p. 96, *maculata*, *terrena*, p. 97, *cordipennis*, *kingie*, p. 98, W. Australia, LEA, t. c. n. spp.
- Ethemaia apicalis*, p. 107, *emarginata*, p. 108, *vagans*, N. S. W., *funerea*, Swan Riv., p. 109, LEA, t. c. n. spp.
- Eucleonus* n. g. p. 188, for *tetragrammus* Pall., FAUST, Deutsche ent. Zeitschr. 1904.
- Eusomus*, revision of palaearctic, DESBROCHERS, Frelon xx, pp. 119–132; *E. beckeri*=(*persicus* Desbr.), REITTER, p. 259, Wien. ent. Zeit. xxiii; *Eusomus*, table of Palaearctic, with *Eusomatulus* subg. n. p. 86, *Euidosomus* subg. n. p. 88, *E. sandueri* sp. n., Transcaucasus, p. 90, REITTER, Wien. ent. Zeit. xxiii.
- E. planidorsum*, *koenigi*, *grisescens*, Caucasus, *persicus*, N. Persia, DESBROCHERS, p. 104, Frelon xii, n. spp.
- Euthyphasis sordidata*, N. S. W., *lineata*, W. Australia, LEA, p. 82, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Eutinopheu dispar*, Sydney, p. 79, *falcata*, Queensland, p. 80, LEA, t. c. n. spp.
- Evadodes rugiceps*, N. S. Wales, LEA, p. 79, t. c. n. sp.
- Evas elliptica*, p. 77, *latipennis*, p. 78, W. Australia, LEA, t. c. n. spp.
- Foucartia notatipennis*, Zante, PIC, p. 50, Echange xx, n. sp.
- Gonocleonus sculptus*, Algeria and Sicily, FAUST, p. 206, Deutsche ent. Zeitschr. 1904, n. sp.
- Gonoropterus* n. sp. *Scolopteridae*, for *G. spinicollis* n. sp., New Zealand, BROUN, p. 122, Ann. Nat. Hist. xiii.
- Hexteus* n. g. *Cossonidae*, p. 124, for *H. rubidus* n. sp., New Zealand, p. 125, BROUN, t. c.
- Heliophilus*, cf. *Sciaphobus*.
- Heterostylus elongatus*, E. Africa, HARTMANN, p. 374, Deutsche ent. Zeitschr. 1904, n. sp.
- Hipporrhinus*, monograph, MARSHALL, pp. 6–141, pls. i–iv, P. Zool. Soc. London 1904, i.
- H. gravidus*, p. 30, *namaquus*, p. 34, *inflatus*, p. 38, *angustus*, p. 40, *peringueyi*, p. 42, pl. i, fig. 4, *suturalis*, p. 46, fig. 9, *variegatus*, p. 50, *humeralis*, p. 57, fig. 10, *knysna*, p. 77, *scaber*, p. 81, *exilis*, pl. ii, fig. 10, *nyassae*, pl. iii, fig. 1, p. 86, *angolensis*, fig. 4, p. 87, *pilosus*, p. 95, *modestus*, p. 106, *permixtus*, pl. iii, fig. 8, p. 108,

- cinereus*, fig. 9, p. 111, *propinquus*, pl. iv, fig. 5, p. 123, *cervinus*, fig. 7, p. 125, *sjoestedti*, p. 131, *oneili*, p. 134, Africa, MARSHALL, t. c. n. spp.
- Holonychus curtipennis*, Madagascar, FAIRMAIRE, p. 237, Ann. Soc. ent. Belgique xlviii, n. sp.
- Homotrachelus hadromerus*, W. Australia, LEA, p. 84, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Hypera oblonga*, characters, SOLARI, p. 536, Ann. Mus. Genova xli.
- H. abrutiana*, Italy, DESBROCHERS, p. 63, Frelon xii, n. sp.
- Hypolixus paulonotatus*, Algeria, PIC, p. 36, Echange 1904, n. sp.
- Hypophylax* n. n. for *Stenophylax* Fairm. 1903, FAIRMAIRE, p. 241, Ann. Soc. ent. Belgique xlviii.
- Inophlæus sternalis*, p. 111, *discrepans*, p. 112, *longicornis*, p. 113, New Zealand, BROWN, Ann. Nat. Hist. xiv, n. spp.
- Ischnotrachelus*, table of species, with *Anasticomerus* subg. n., p. 169, for *I. mutabilis* Faust, HELLER, pp. 169–175, Ent. Tidskr. xxv.
- I. ischnomias*, p. 175, *alternans*, p. 176, *elegans*, p. 177, Cameroons, HELLER, t. c. n. spp.
- Isomicrus* n. g. *Isorrhynchinorum*, p. 413, *I. castaneus* n. sp., Usambara, p. 414, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Læmosaccus*, table of Australian, corrected, LEA, p. 134, Tr. R. Soc. S. Austral. xxviii.
- Laparocerus obesulus*, Madeira, DESBROCHERS, p. 63, Frelon xii, n. sp.
- Larinus ferrugatus*, metamorphosis, XAMBEU, p. 81, Naturaliste 1904.
- L. zancleanus*, Sicily, VITALE, Riv. Col. ital. ii, ? p. 125 [not seen by Recorder], n. sp.
- Leptops granulatus*, p. 99, *nodicollis*, *maleficus*, p. 100, Queensland, *setosus*, p. 101, *canaliculatus*, p. 102, N. S. W., *brachystylus*, p. 103, *horridus*, p. 104, *elegans*, p. 105, Queensland, LEA, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Limnobaris lineigera*, Usambara, HARTMANN, p. 415, Deutsche ent. Zeitschr. 1904, n. sp.
- Lithinus perrieri*, *parcelacteus*, Madagascar, FAIRMAIRE, p. 242, Ann. Soc. ent. Belgique xlviii, n. spp.
- Lixomorphus* n. g. p. 189, for *ocularis* Fabr., FAUST, Deutsche ent. Zeitschr. 1904.
- Lixus*; table and catalogue of Palearctic, DESBROCHERS, Frelon xii, pp. 65–104, cf. *Broconius*, *Prionolixus*; PETRI criticises Desbrochers' work, treats his gen. n. as subgenera, and tabulates the Palearctic species, Wien. ent. Zeit. xxiii, pp. 183–198; *L. petrii* n. n. for *macer* Petri, *L. cafrarius* n. n. for *carinicollis* Fähr., *L. fahræi* n. n. for *hypocrita* Fähr., CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- L. coloratus*, Siberia etc., PETRI, p. 194, Wien. ent. Zeit. xxiii; *L. denticollis*, Syria, *pubirostris*, Kopet-Dagh, p. 65, *rectodorsalis*, Mardin, p. 66, *macer*, Tonja, *convexicollis*, p. 67, *amplirostris*, p. 68, Akbès, *colchicus*, Caucasus, *ibis*, Syria, p. 69, *obesus*, p. 70, *baculiformis*, Caucasus, *bifasciatus*, Samarkand, p. 71, *apfelbecki*, Hungary, p. 72, *operculifer*, p. 73, *noctuius*, *polylineatus*, p. 74, Caucasus, *gibbistrostris*, Greece, p. 75, *korbi*, Anatolia, p. 76, *ulcerosus*, S. Europe, p. 77, PETRI, t. c.; *L. tunisiensis*, p. 60, *confusus*, p. 61, Tunis, *inermipennis*, Asia Minor, p. 62, DESBROCHERS, Frelon xii: *L. striatopunctatus*, Syria, p. 72, *rectirostris*, Biskra, p. 74, *villosulus*, Algeria, p. 86, *quadraticollis*, Asia Minor, p. 90, *tibiellus*, Biskra, p. 94, DESBROCHERS, t. c.; *L. weisei*, Usambara, HARTMANN, p. 390, Deutsche ent. Zeitschr. 1904; *L. gigas*, p. 243, *floccosus*, *albicornis*, *dorsotinctus*, p. 244, *bituberosus*, p. 245, *humerosus*, p. 246, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *L. (Hypolixus) impressifrons*, *subdentatus*, India, p. 233, *xantussi*, Borneo, p. 234, *L. semilunatus*,

- Madeira, *coloratus*, Turkestan, p. 235, PETRI, Ann. Mus. Hungar. ii : **n. spp.**
- Mamuchus* **n. g.** near *Cryptorhynchus*, *M. squamosopictus*, p. 249, *inornatus*, p. 250, **n. spp.**, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii.
- Mandalotus campylocnemis*, *piliventris*, p. 116, *scaber*, p. 117, *amplicollis*, *opureus*, p. 118, *excavatus*, *suturalis*, p. 119, *pinguis*, *pallidus*, p. 120, *reticulatus*, *pusillus*, p. 121, *subglaber*, p. 122, Australia, LEA, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Matesia* **n. g.** near *Euphalia*, *M. maculata* **n. sp.**, N.W. Australia, LEA, p. 87, t. c.
- Mecaspis bedelli*, Morocco, p. 225, *lentus*, Turkestan, p. 227, *libanicus*, Lebanon, p. 229, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Mechistocerus* and *Rhadinomerus*, characters and table, HELLER, p. 186, Ent. Tidskr. xxv.
- M. (Rhadinomerus) vulgaris*, Cameroons, id., p. 190, t. c. **n. sp.**
- Medicasta leptopsoides*, W. Australia, LEA, p. 110, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Megarrhinus tanganus*, p. 402, *distinctus*, p. 403, *frater*, p. 404, *interstitialis*, p. 405, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Meira amorei*, Abruzzo, SOLARI, p. 526, Ann. Mus. Genova xli, **n. sp.**
- Mesocleonus* **n. g.** pp. 189 & 222, for *implicatus* Faust, FAUST, Deutsche ent. Zeitschr. 1904.
- Metallites aquiseatanus*, France, ABEILLE, p. 280, Bull. Soc. ent. France 1904, **n. sp.**
- Methypora parallela* to *Ophthalmorychus*, LEA, p. 84, Tr. R. Soc. S. Austral. xxviii.
- Metulma neptis*, Cameroons, HELLER, p. 196, Ent. Tidskr. xxv; *M. usambarica*, E. Africa, HARTMANN, p. 412, Deutsche ent. Zeitschr. 1904; *M. pusilla*, Madagascar, FAIRMAIRE, p. 248, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Miccotrogus lederi*, Armenia, *prescutellaris*, Mongolia, PIC, Bull. Soc. Autun xv, **n. spp.**
- Microcleonus* **n. g.** for part of *Hypolixus*, DESBROCHERS, p. 95, Frelon xii. Cf. *Paralixus*.
- Microcleonus* **n. g.** pp. 183 & 198, for *sedukovi* Bohm. and *panderi* Fahr., FAUST, Deutsche ent. Zeitschr. 1904.
- Mimus usambaricus*, E. Africa, HARTMANN, p. 417, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Molytophilus* **n. g.** *Molytinorum*, *M. carinatus* **n. sp.**, Usambara, HARTMANN, p. 388, t. c.
- Monolophus* **n. g.** pp. 182 & 196, for *Mecaspis preclitus* Faust; FAUST, Deutsche ent. Zeitschr. 1904.
- Mylacus nitidulus*, Italy, VITALE, Riv. Col. ital. ii, ?p. 125 [not seen by Recorder], **n. sp.**
- Myllocerus crassicornis*, Tokat, DESBROCHERS, p. 105, Frelon xii: *M. rad-densis*, Amurland, PIC, p. 35, Echange 1904; *M. plebeius*, E. Africa, HARTMANN, p. 387, Deutsche ent. Zeitschr. 1904; *M. carinatus*, N.W. Australia, p. 85, *usitatus*, N. S. Wales, p. 86, LEA, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Nanophyes spinicrus*, *magnus*, Madagascar, FAIRMAIRE, p. 250, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Nemoxenus* **n. g.** pp. 188 & 232, with *zebra* Chev., etc., FAUST, Deutsche ent. Zeitschr. 1904.
- Neosyagrus* **n. g.** p. 515, *N. cordipennis* **n. sp.**, Sydney, p. 516, LEA, Agric. Gaz. N. S. W. xv.
- Nomimonyx* **n. g.** pp. 186 & 222, for *N. perturbans* **n. sp.**, Cape Good Hope (not described), FAUST, Deutsche ent. Zeitschr. 1904.

- Nycterorhinus* **n. g.** near *Crepidotus*, *N. ebenus* **n. sp.**, Madagascar, FAIRMAIRE, p. 252, Ann. Soc. ent. Belgique xlviii.
- Ochtharthrum aurivilliusi*, Cameroons, HELLER, p. 178, Ent. Tidskr. xxv, **n. sp.**
- Odites tibialis*, W. Australia, LEA, p. 114, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Omius*; characters and composition, synonymy; *Urometopus* subg. **n.** for *longicornis* etc., FORMÁNEK, pp. 17-25; *Rhinomias* subg., characters of species, pp. 24-28 and 174-181, Munchen. Kol. Zeitschr. ii.
- O. haifensis*, Syria, FORMÁNEK, p. 299, t. c. **n. sp.**
- Ophthalmorychus spongiosus*, N. S. Wales, LEA, p. 83, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Oreocharis ferruginea*, p. 120, *pullata*, p. 121, New Zealand, BROWN, Ann. Nat. Hist. xiv, **n. spp.**
- Origenes* **n. g.** for *Hipporrhinus callidus*, MARSHALL, p. 141, Entomologist 1904.
- Orthochaetes alpicola*, Val Sorino, K. DANIEL, p. 26, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Osphilia ikuthana*, E. Africa, HELLER, p. 290, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Otiorrhynchus cardiniger brattiensis* var. **n.**, MÜLLER, p. 209, Munchen. Kol. Zeitschr. ii; *O. romanus* var. *minor*, VITALE, p. 24, Natural. Sicil. xvii; *O. beauprei* **n. n.** for *vaulogeri* Sol. nec Pic, SOLARI, p. 536, Ann. Mus. Genova xli.
- O. lazarevici*, Servia, CSIKI, p. 591, Ann. Mus. Hungar. ii; *O. (Arammichnus) amarus*, Asia Minor, REITTER, p. 159, Wien. ent. Zeit. xxiii : **n. spp.**
- Oxystoma leviuscula*, Algeria, DESBROCHERS, p. 58, Frelon xii, **n. sp.**
- Pachycerus desertorum*, Kisil-Kum, *sellatus*, Bengal, p. 223, *crassicornis*, Kaifa, p. 224, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Pachyprypnus modicus*, New Zealand, BROWN, p. 117, Ann. Nat. Hist. xiv, **n. sp.**
- Paralixus* **n. n.** for *Microcleonus* Desb., CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- Paraplesius* **n. g.** near *Amphitmetus*, *P. plebeius* **n. sp.**, Usambara, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Pelororhinus amplipennis*, W. Australia, LEA, p. 124, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Pentarthrum crassellum*, New Zealand, BROWN, p. 123, Ann. Nat. Hist. xiv, **n. sp.**
- Pentatropis* **n. g.** p. 192, for S. African *Pachycerus*, with *P. blandus* **n. sp.**, Cape, p. 193, FAUST, Deutsche ent. Zeitschr. 1904.
- Peritelus nigrans* (= *Ot. albocoronatus* Stierl.), SOLARI, p. 536, Ann. Mus. Genova xli.
- Phaulosomus* **n. g.** pp. 186, 204, for *mus* Kolbe, and *P. signatellus*, Senegal, and *kilimanus*, Kilimanjaro, **n. spp.**, pp. 204, 205, FAUST, Deutsche ent. Zeitschr. 1904.
- Philacta maculifera*, New Zealand, BROWN, p. 119, Ann. Nat. Hist. xiv, **n. sp.**
- Phylaitis sanguinosus*, Madagascar, FAIRMAIRE, p. 248, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Phytonomus depressidorsum*, Algeria, p. 59, *strictus*, Caucasus, p. 60, DESBROCHERS, Frelon xii; *P. horvathi*, Servia, CSIKI, p. 592, Ann. Mus. Hungar. ii : **n. spp.**
- Piezotrachelus foveicollis*, p. 398, *vicinus*, p. 399, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Platycopes globulus*, Madagascar, FAIRMAIRE, p. 239, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Platyomida brevicornis*, New Zealand, BROWN, p. 107, Ann. Nat. Hist. xiv, **n. sp.**

- Polydrosus lateralis* var. n. *inermis*, SOLARI, p. 527, Ann. Mus. Genova xli.
P. (? *Cherodrys*) *cressius*, Crete, PIC, p. 4, Echange 1904, n. sp.
Polyphrades vitis, p. 88, *despicatus*, *exoletus*, p. 89, *extenuatus*, W. Australia, *setosus*, N.W. Australia, p. 90, *granulatus*, Sydney, p. 91, LEA, Tr. R. Soc. S. Austral. xxviii, n. spp.
Pparchus n. g. near *Sargon*, for *P. lewisi* n. sp., New Zealand, BROWN, p. 114, Ann. Nat. Hist. xiv.
Prionolixus n. g. p. 80, for *L. seriemaclulatus* and *soricinus*, DESBROCHERS, Frelon xii.
Prionorhinus lacrimans, *peringueyi*, S. Africa, FAUST, p. 200, Deutsche ent. Zeitschr. 1904, n. spp.
Procas fastidiosus, Tunis, PIC, p. 93, Echange xx; *P. sibiricus*, E. Siberia, PIC, p. 27, t. c. : n. spp.
Prosagyleus phytolymus to *Eutinophæa* or *Maleuterpes*, LEA, p. 79, Tr. R. Soc. S. Austral. xxviii.
Pseudominus n. g. *Cossinorum*, *P. corpulentus* n. sp., Usambara, p. 416, HARTMANN, Deutsche ent. Zeitschr. 1904.
Pseudostromborrhinus n. g. near *Stromborrhinus*, p. 191, *P. dorsalis* n. sp., Cameroons, p. 192, HELLER, Ent. Tidskr. xxv.
Ptochus (*Argoptochus*) *ophthalmicus*, Italy, K. DANIEL, p. 83, Munchen. Kol. Zeitschr. ii; *P. cretensis*, Crete, PIC, p. 4, Echange 1904 : n. spp.
Rhadinomus lacordairei, great variation, LEA, p. 81, Tr. R. Soc. S. Austral. xxviii.
Rhinaria caudata, *concavirostris*, p. 125, *sulcirostris*, *bisulcata*, p. 126, *favosa*, *tragocephala*, p. 127, *simulans*, p. 128, *aberrans*, *convexirostris*, p. 129, Australia, LEA, t. c. n. spp.
Rhinocles? *modestus*, Cameroons, HELLER, p. 199, Ent. Tidskr. xxv, n. sp.
Rhypastus n. g. near *Platymicus*, p. 239, *R. truncatulus* n. sp., Madagascar, p. 240, FAIRMAIRE, Ann. Soc. ent. Belgique xlvi.
Rhyssomatus subcostatus, pl. xvii, fig. 23, p. 334, *rufus*, fig. 24, p. 335, *pruinosis*, fig. 27, p. 336, *nigerrimus*, fig. 28, *morio*, fig. 29, p. 337, CHAMPION, Biol. Centr. Amer. Col. iv, pt. 4.
R. rugosus, pl. xvii, fig. 14, p. 327, *rugulipennis*, fig. 15, *yucatanus*, p. 328, *dilatocollis*, fig. 16, *acute-costatus*, fig. 17, *crenatus*, p. 329, *latus*, fig. 18, *latipennis*, fig. 19, p. 330, *parvulus*, *laticollis*, fig. 20, p. 331, *biseriatus*, *sculpticollis*, fig. 21, p. 332, *sculpturatus*, *punctato-sulcatus*, p. 333, *debilis*, fig. 22, *alternans*, p. 334, *rufescens*, fig. 25, p. 335, *subrufus*, fig. 26, p. 336, *puncticollis*, *nitidus*, fig. 30, p. 338, Central America, CHAMPION, t. c. n. spp.
Rhytiphleus ovipennis, p. 240, *holonychinus*, p. 241, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlvi, n. spp.
Sclerosomus laticauda, Mexico, p. 314, pl. xvi, fig. 26, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4, n. sp.
Sciaphilus diversepubens, *dividuus*, p. 91, *nitens*, *minutissimus*, p. 92, Algeria, PIC, Echange xx, n. spp.
Sciaphobus n. n. for *Heliophilus*, p. 86, with *S. psittacinus* n. sp., Italy, p. 85, K. DANIEL, Munchen. Kol. Zeitschr. ii.
Scotoepophilus n. g. *Menemachinorum*, *S. odiosus* n. sp., Usambara, HARTMANN, Deutsche ent. Zeitschr. 1904, p. 411.
Scythropus eusomoides, Tangier, DESBROCHERS, p. 107, Frelon xii, n. sp.
Sibinia fausti, to *Tychius*, PIC, p. 147, Bull. Soc. Autun xv.
S. obscuripes, Turcomania, *albosquamosa*, Dead Sea, PIC, p. 148, t. c. n. spp.
Sitona; the known food-habits, BARGAGLI, pp. 8-10, Bull. Soc. ent. Ital. xxxvi.
Solenopus bilineatus, pl. xvi, fig. 25, p. 313, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4.
Sphenophorus mormon, p. 128, *distichlidis*, p. 129, *confluens*, p. 133, *vestitus*, *neomexicanus*, p. 134, *phaeniciensis*, p. 135, *coactorum*, p. 136, N. America, CHITTENDEN, P. ent. Soc. Washington vi, n. spp.

- Sphrigodes variegatus*, p. 383, *vicinus*, p. 385, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Stenolandra n. g.* near *Catapyges*, *S. lacteostrigata n. sp.*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii.
- Stenopelmus rufinasus* = (*Degorsia champenoisi*), BEDEL, p. 23, Bull. Soc. ent. France 1904.
- Stephanocleonus persimilis*, Mongolia, *jacobsoni*, no locality, p. 244, *koppeni*, Mongolia, *waldheimi*, Irkutsk, p. 245, *spissus*, *dubius*, no localities, p. 246, *confessus*, Transbaikal, *versutus*, Dauria, p. 247, *kirtipes*, Dauria, p. 250, *comicus*, Mongolia, *brunnipes*, Nan-Shan, *exiguus*, Changai, p. 251, *chinensis*, *sejunctus*, Grenada, p. 253, *colossus*, Chan-gai, p. 256, *acerbus*, West-Victoria, *suspiciosus*, Gan-ssu, *suffusus*, *tardus*, p. 257, *illex*, p. 258, Mongolia, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Sternechus* = (*Plectromodes* Cas.), CASEY, p. 324, Canad. Ent. xxxvi.
- Stomodes amorei*, Italy, DESBROCHERS, p. 64, Frelon xii, **n. sp.**
- Stramia n. g.* for part of *Hipporhinus* and *Tanyrrhynchus* Boh., MARSHALL, p. 140, P. Z. S. 1904, i.
- Synaptoplus dentipennis*, Africa, HARTMANN, p. 370, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Systates collaris*, p. 378, *denticollis*, *tuberculifer*, p. 379, Usambara, HARTMANN, t. c. **n. spp.**
- Tanymecus crassicornis*, Rome, SOLARI, p. 527, Ann. Mus. Genova xli, **n. sp.**
- Tapinomorphus n. g.* near *Macrostylus*, *T. setosus*, p. 372, *metallicus*, p. 373, **n. spp.**, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Temnorhinus seductus*, Djibouti, *martini*, Cape Palos, *limbifer*, China, FAUST, p. 218, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Tetragonothorax curvipes*, Abyssinia, *parvulus*, Scioa, FAUST, p. 197, t. c. **n. spp.**
- Thylacites laufferi*, Spain, p. 37, *barrosi*, Portugal, p. 38, *minimus*, Bosnia, p. 39, DESBROCHERS, Frelon xiii, **n. spp.**
- Tigones dispar*, New Zealand, BROWN, p. 107, Ann. Nat. Hist. xiv, **n. sp.**
- Timorus maximus*, Brazil, HELLER, p. 294, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tocris n. g.* *Cylindrorhinidae*, p. 115, for *T. latirostris n. sp.*, New Zealand, p. 116, BROWN, Ann. Nat. Hist. xiv.
- Trichobaris mucorea*, natural history, BRIDWELL, pp. 44-46, Bull. U. S. Dep. Agric. Ent. xlv.
- Tychius nigricollis* var. *trilineata*, PIC, p. 50, Echange xx.
- T. lepieuri*, Algeria, PIC, p. 82, t. c.; *T. magnificus*, Buchara, *armeniacus*, Armenia, p. 141, *semiauratus*, Mongolia, *uralensis*, Ural, p. 142, *albonotatus*, p. 143, *bisquamosus*, Araxes Valley, *turkestanicus*, Aunan, p. 144, *brevipennis*, *auliensis*, Aulie-Ata, p. 145, *rufofemoratus*, Syria, *starcki*, Caucasus, p. 146, PIC, Bull. Soc. Autun xv : **n. spp.**
- Urometopus subg. n.*, cf. *Omius*, *U. ferrugineus*, Astrabad, FORMÁNEK, p. 299, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Xanium n. g.* near *Ectemnorhinus*, for *X. vanhoeffenianum n. sp.*, Crozet islds., ENDERLEIN, p. 670, Zool. Anz. xxvii.
- Xanthochelus tropicus*, *beatius*, *nepotalis*, Africa, p. 260, *assamensis*, *insubidus*, India, *figuratus*, *insolens*, Africa, p. 261, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Xenomacrus n. g.* pp. 186, 201, for S. African spp., FAUST, t. c.
- Xynaea uniformis*, Kings Sound, LEA, p. 123, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Yuccaborus lentiginosus*, Texas, CASEY, p. 323, Canad. Ent. xxxvi, **n. sp.**
- Zantes convexicollis*, *rufinus*, Madagascar, FAIRMAIRE, p. 246, Ann. Soc. ent. Belgique xlviii, **n. spp.**

- Zephryne personata*, N. S. Wales, LEA, p. 115, Tr. R. Soc. S. Austral. xxviii, n. sp.
Zurus spilothorax, Brazil, HELLER, p. 291, Ann. Soc. ent. Belgique xlvi, n. sp.

SCOLYTIDÆ.

[Cf. BLANDFORD (614), BROWN (184), HAGEDORN (647-651), HOPKINS (704), KNOCKE (823), LEA (864), POWELL (1104).]

Photographs of the work etc. of numerous *Scolytidæ*, HOPKINS, Bull. U. S. Dep. Agric. Ent., No. 48, 22 pls.

The generations in *Scolytidæ*, KNOCKE (823).

Scolytidæ of Moravia, FORMÁNEK (535).

- Brachyspartus ebeninus*, pl. viii, f. 11, *barbatus*, Panama, BLANDFORD, p. 265, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
Coccotrypes eggersii, S. America, in fruit of *Phytelephas*, HAGEDORN, p. 449, Allg. Zeitschr. Ent. ix.
Corthylus, the genus with table of species, BLANDFORD, pp. 251-254, Biol. Centr.-Amer. Col. iv, pt. 6.
C. flagellifer, pl. viii, f. 2, p. 255, *luridus*, p. 256, *ptyocerus*, f. 5, p. 257, *comatus*, p. 258, *panamensis*, p. 259, *rubricollis*, p. 260, *collaris*, *parvulus*, p. 261, Central America, *fuscus*, Brazil, *discoideus*, Venezuela, p. 262, id. t. c. n. spp.
Cryphalus granulatus, p. 229, var. n. *tredlii*, p. 232, *C. asperatus* Gyll. = (*binodulus* Ratz.) p. 230, HAGEDORN, München. Kol. Zeitschr. ii.
C. grothii, Centr. Eur., id. t. c., p. 232 and 372, cut, n. sp.
Dendroctonus valens, note on habits, POWELL, p. 239, J. N. York Ent. Soc. xii.
Dendroterus n. g. near *Dryocates*, *D. mexicanus*, pl. vii, f. 25, *sallæi* n. spp. Mexico, BLANDFORD, p. 233, Biol. Centr.-Amer. Col. iv, pt. 6.
Glochinerus n. g. *Corthyli*, *G. retusipennis*, pl. ix, figg. 1, 2, p. 266, *gemellus*, p. 267, n. spp., Guatemala, BLANDFORD, t. c.
Gnathotrichus consentaneus, pl. vii, f. 26, p. 247, *bituberculatus*, p. 248, Guatemala, BLANDFORD, t. c. n. spp.
Hylesinus fici, Sydney, LEA, p. 103, P. Linn. Soc. N. S. Wales xxix, n. sp.
Hylocurus spinifex, Mexico, pl. vii, f. 23, p. 225, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6, n. sp.
Hypothenemus eruditus, synonymy and habitat, BLANDFORD, pp. 229, 230, t. c.
H. validus, Mexico, p. 228, *lævigatus*, Nicaragua, p. 229, id. t. c. n. spp.
Ips curvidens and allies, distinctions, BARGMANN, pp. 262-264, Allg. Zeitschr. Ent. ix.
Mesoscolytus n. g. p. 125, for *M. inurbanus* n. sp., New Zealand, p. 126, BROWN, Ann. Nat. Hist. xiv.
Metacorthylus n. g. *M. nigripennis* n. sp., Panama, pl. viii, f. 10, p. 263, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6.
Phlaëobius vittatus, ♂, UYTENBOOGAART, p. 143, Ent. Ber. Nederland. i.
Pityophthorus nigricans, p. 236, *amænus*, *confusus*, p. 237, *poricollis*, *cacuminatus*, p. 238, *guatemalensis*, p. 239, *diglyphus*, *obtusipennis*, p. 240, *timidus*, *confinis*, p. 241, *cinnamatus*, *obsoletus*, p. 242, *P. ? incompositus*, p. 243, *carinifrons*, *politus*, p. 244, *deyrollei*, *incommodus*, p. 245, Central America, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
Platypus australis, sexes, LEA, p. 105, P. Linn. Soc. N. S. Wales xxix.
P. omnivorus, Tasmania, id., p. 104, t. c. n. sp.
Pterocyclon, characters and synonymy, BLANDFORD, pp. 288-270, Biol. Centr.-Amer. Col. iv, pt. 6.
P. melanura, pl. viii, f. 13, p. 272, *præruptum*, *tomicoides*, f. 15, p. 273,

- hoegeri*, p. 274, *umbrinum*, *consimile*, p. 275, *difficile*, *luctuosum*, p. 276, *bidens*, p. 277, *glabrifrons*, *punctifrons*, p. 278, *cordatum*, p. 279, *terminatum*, *egenum*, p. 280, Centr. America, BLANDFORD, t. c. n. spp.
- Scolytoptatypus* and its species discussed, HAGEDORN, pp. 404–413, Stettin Ent. Zeit. lxxv.
- S. fasciatus*, Caffraria, id. p. 405, t. c.; *S. hamatus*, Java, HAGEDORN, p. 260, cuts, Ins. Borse 1904; *S. pubescens*, p. 123, *minimus*, p. 125, Darjiling, *muticus*, p. 124, Japan, HAGEDORN, Bull. Mus. Paris 1904 : n. spp.
- Scolytus*, synonymical notes, SEMENOW, pp. 37, 38, Rev. Russe Ent. iv.
- Styphlosoma* n. g. near *Cryphalus*, *S. granulatum* n. sp., Panama, BLANDFORD, p. 232, Biol. Centr.-Amer. Col. iv, pt. 6.
- Tomicus truncatus* Er. (= *Amasa thoracica* Lea), LEA, p. 106, P. Linn. Soc. N. S. Wales xxix; *T. plastographus*, natural history, POWELL, p. 238, J. N. York Ent. Soc. xii.
- Xyleborus*, to this belong *Xylopertha compressa*, *hirsuta* and *parva* Lea, LEA, p. 106, P. Linn. Soc. N. S. Wales xxix; *X. perforans*, in *Phyt-elephas* fruit, HAGEDORN, p. 449, Allg. Zeitschr. Ent. ix; *X. dispar*, larval structure, habits, CHAPMAN, pp. 100–102, Tr. ent. Soc. London 1904.
- X. hirtus*, *geminatus*, Darjiling, HAGEDORN, p. 126, Bull. Mus. Paris 1904, n. spp.

BRENTHIDÆ.

- Larva of *Brenthus lineicollis*, HELLER, p. 397, Stettin Ent. Zeit. lxxv.
- Notes on N. American *Brenthidæ*, BEYER, p. 168, J. N. York Ent. Soc. xii, and corrections, t. c. p. 257.

ANTHRIBIDÆ.

- [Cf. JORDAN (767–769, 772), PIC (1069), SCHAEFFER (1220), SCHILSKY (1227).]
- Acorynus tonkinianus*, *mosonicus*, Tonkin, JORDAN, p. 232, Nov. Zool. xi, n. spp.
- Allandrus indistinctus*, Bolivia, JORDAN, p. 242, t. c. n. sp.
- Anthrenosoma* n. g. p. 281, *A. tibialis*, *bohlsi*, *gounellei*, p. 282, n. spp., S. America, JORDAN, t. c.
- Anthribus wallacei philippinensis*, *malaicus* subsp. n., JORDAN, p. 235, t. c.
- A. planatus*, Gold Coast, JORDAN, p. 239, t. c.; *A. macrocerus*, Sikkim, *frontalis*, Sumatra, JORDAN, p. 235, t. c.; *A. farinatus*, *gounellei*, p. 296, *levipennis*, *picticollis*, p. 297, *frenatus*, *analis*, p. 298, *lineiger*, *collaris*, *inequalis*, p. 299, *plagiatus*, p. 300, S. America, JORDAN, t. c.; *A. bipunctatus*, p. 235, *penicellatus*, p. 236, Texas, SCHAEFFER, J. N. York Ent. Soc. xii : n. spp.
- Apatenia poecila*, p. 85, *gularis*, p. 86, New Guinea, JORDAN, Ann. Mus. Genova xli, n. spp.
- Apolecta tonkiniana*, Manson Mts., p. 236, *diversa*, Borneo, p. 237, JORDAN, Nov. Zool. xi, n. spp.
- Asemorhinus sportella*, Sumatra, Borneo, JORDAN, p. 234, t. c. n. spp.
- Barra* n. g. p. 274, *B. gounellei* n. sp., Bahia, p. 275, JORDAN, t. c.
- Blaberops* n. g. near *Blaberus*, p. 238, *B. macrocerus* n. sp., Usambara, p. 239, JORDAN, t. c.
- Caccorhinus obscurus*, Celebes, JORDAN, p. 236, t. c. n. sp.
- Callanthribus* n. g. near *Sintor*, p. 82, *C. xanthomelas* n. sp., New Guinea, p. 83, JORDAN, Ann. Mus. Genova xli.
- Corrhecerus melaleucus*, *æqualis*, S. America, JORDAN, p. 271, Nov. Zool. xi, n. spp.

- Dasyrhopala* n. g. near *Discotenes*, *D. tarsalis* n. sp., Brazil, JORDAN, p. 272, t. c.
- Dendrotrogus colligens papuanus* subsp. n., JORDAN, p. 84, Ann. Mus. Genova xli.
- Discotenes consors*, Peru, JORDAN, p. 272, Nov. Zool. xi, n. sp.
- Domoptolis* n. g. for *Gymnognathus menetriesi* Boh., JORDAN, p. 252, t. c.
- Doticus convexus*, Celebes, p. 90, *planatus*, New Guinea, p. 91, JORDAN, Ann. Mus. Genova xli, n. spp.
- Epitaphius lunatus*, E. Africa, JORDAN, p. 240, Nov. Zool. xi, n. sp.
- Erotylopsis* n. g. near *Euparius*, p. 308, *E. pujoli* n. sp., Brazil, p. 309, JORDAN, t. c.
- Eucorynus unicolor*, Ternate, JORDAN, p. 85, Ann. Mus. Genova xli, n. sp.
- Eucyclotropis* n. g. near *Discotenes*, *E. pustulata*, *striata*, Brazil, p. 273, *pylades*, Mexico, p. 274, n. spp., JORDAN, Nov. Zool. xi.
- Eugigas harmandi*, pl. viii, figg. 15, 16, p. 129, LESNE, Mission Pavie iii.
- Eugonodes* n. g. near *Eugonus*, *E. marmoreus*, *brevirostris* n. spp., Brazil, JORDAN, Nov. Zool. xi.
- Eugonops* n. g. *E. germaini*, Bolivia, *clericus*, Bahia, p. 285, n. spp., JORDAN, t. c.
- Eugonus simplex*, *tenuis*, p. 300, *robustus*, *ornatus*, *particolor*, p. 301, S. America, JORDAN, t. c. n. spp.
- Euparius polius*, *obesus*, *calcaratus*, p. 303, *molitor*, *similis*, p. 304, *consors*, *nodosus*, *rufus*, p. 305, *nigritarsis*, p. 306, *albiceps*, *parvulus*, *hypsideres*, p. 307, *quagga*, *suturalis*, p. 308, S. America, JORDAN, t. c. n. spp.
- Euphlaeobius* n. g. near *Phlaeobius*, *E. asellus* n. sp., E. Africa, JORDAN, p. 239, t. c.
- Eusintor* n. g. near *Sintor*, p. 80, *E. lorice* n. sp., New Guinea, p. 81, JORDAN, Ann. Mus. Genova xli.
- Eusphyrus scutellaris*, p. 290, *hamatus*, *lateralis*, *nubilus*, p. 291, S. America, JORDAN, Nov. Zool. xi, n. spp.
- Exechontis* n. g. near *Gibber*, p. 283, *E. sparsa* n. sp., Brazil, p. 284, JORDAN, t. c.
- Goniocleus* n. g. p. 260, *G. baccatus*, *melas*, p. 261, *minor*, *hirsutus*, *apicalis*, p. 262, S. America, *tarsalis*, Costa Rica, p. 263, *capucinus*, Peru, *umbrinus*, Mexico, p. 264, n. spp., JORDAN, t. c.
- Gymnognathus ophiopsis* Dalm. = (*decorus* Perr.), JORDAN, p. 242, t. c.
- G. extensus*, p. 242, *marianna*, *ada*, *blancu*, p. 243, *hilda*, *emma*, p. 244, *clara*, *bella*, p. 245, *coronatus*, *nubilus*, p. 246, *alma*, *irma*, p. 247, *clelia*, *erna*, *nanus*, p. 248, *soror*, Brazil, *helenia*, Colombia, p. 249, *editha*, *martha*, p. 250, *hamatus*, *leucomelas*, p. 251, *comptus*, Brazil, *scolytinus*, Peru, JORDAN, t. c. n. spp.
- Habrissus tonkinianus*, Tonkin, JORDAN, p. 234, t. c. n. sp.
- Homocleus* n. g. *H. concolor*, p. 264, *femorals*, Nicaragua, *vestitus*, p. 265, *dorsalis*, p. 266, S. America, n. spp., JORDAN, t. c.
- Hypseus axillaris major*, p. 87, *H. frenatus morio*, p. 88, subspp. n., JORDAN, Ann. Mus. Genova xli.
- Hypseus vestitus*, Celebes, JORDAN, p. 87, t. c. n. sp.
- Lagopezus lugubris*, Rio de Janeiro, JORDAN, p. 275, Nov. Zool. xi, n. sp.
- Litocerus histrio fluviatilis* subsp. n., JORDAN, p. 85, Ann. Mus. Genova xli.
- L. sticticus*, Tonkin, JORDAN, p. 233, Nov. Zool. xi, n. sp.
- Mecocerus hauseri*, W. Africa, JORDAN, p. 238, t. c.; *M. callosus*, Tonkin, JORDAN, p. 231, Nov. Zool. xi : n. spp.
- Mecotropis cylindricus*, Tonkin, JORDAN, p. 230, t. c. n. sp.
- Misthosima crucifera*, New Guinea, JORDAN, p. 90, Ann. Mus. Genova xli, n. sp.
- Monocleus* n. g. *M. elaphrinus*, *spiniger*, p. 255, *annulipes*, *basalis*, p. 256, *rhombofer*, or, p. 257, *sordidus*, S. America, *idacus*, Mexico, p. 258,

- costatus*, Bolivia, *centralis*, Para, p. 259, *niger*, Costa Rica, p. 260, JORDAN, Nov. Zool. xi, **n. spp.**
- Nemotrichus*, tabulated, p. 270, *N. jekeli*, *andicola* and *uniformis*, subsp. n., p. 269, JORDAN, t. c.
- N. vitticollis*, Cayenne, *armatus*, Costa Rica, p. 267, *niger*, *pæcilus*, p. 268, *fuscus*, *obtusus*, p. 269, S. America, JORDAN, t. c. **n. spp.**
- Nessiara armata*, p. 233, *mosonica*, p. 234, Tonkin, JORDAN, t. c. **n. spp.**
- Ormiscus*, and allies, synonymy, classification, JORDAN, p. 286, t. c.
- O. cupreus*, p. 286, *ornatus*, *ancora*, *costifer*, p. 287, *sparsilis*, *vulgaris*, p. 288, *discifer*, *spilotus*, *lineatus*, *costifrons*, p. 289, *brevis*, *angulatus*, p. 290, S. America, JORDAN, t. c. **n. spp.**
- Orthotropis* **n. g.** near *Gymnognathus*, *O. quadrata* **n. sp.**, Brazil, JORDAN, p. 254, t. c.
- Paranthribus* **n. g.** *P. rufescens* **n. sp.**, Bahia, JORDAN, p. 283, t. c.
- Parexillis* **n. g.** *P. lineatus*, p. 284, *variegatus*, p. 285, **n. spp.**, Brazil, JORDAN, t. c.
- Phænithon tibialis*, *longitarsis*, p. 292, *longicornis*, *lævipennis*, p. 293, S. America, *nigritarsis*, Centr. America, *similis*, p. 294, *pictus*, *ruficollis*, p. 295, S. America, JORDAN, t. c.
- Pheochrotus phorcas*, Burma, JORDAN, p. 80, Ann. Mus. Genova xli, **n. sp.**
- Phanosolena* **n. g.** *Tropiderini*, p. 234, *P. nigrotuberculata* **n. sp.**, Texas, p. 235, SCHAEFFER, J. N. York. Ent. Soc. xii.
- Phlæobius lineifer*, p. 240, *striga*, *pachymerus*, p. 241, E. Africa, JORDAN, Nov. Zool. xi; *P. papuanus*, New Guinea, JORDAN, p. 89, Ann. Mus. Genova xl : **n. spp.**
- Physopterus oculatus*, Tonkin, JORDAN, p. 231, Nov. Zool. xi, **n. sp.**
- Piezocorynus brevis*, *plagifer*, *compar*, p. 277, *verrucatus*, *suturalis*, p. 278, *dorsalis*, *homæus*, *alternans*, p. 279, *basalis*, p. 280, S. America, JORDAN, t. c. **n. spp.**
- Piezonemus* **n. g.** near *Piezocorynus*, p. 275, *durus*, *lateralis*, p. 276, **n. spp.**, Brazil, JORDAN, t. c.
- Ravasia gestroi*, Celebes, p. 83, *convexa*, Java, p. 84, JORDAN, Ann. Mus. Genova xli, **n. spp.**
- Scymnopsis* **n. g.** *S. suturalis* **n. sp.**, Bolivia, JORDAN, Nov. Zool. xi.
- Strabops* **n. g.** near *Gymnognathus*, *S. insignis* **n. sp.**, Amazons, JORDAN, p. 253, t. c.
- Sympaector fruhstorferi*, Tonkin, JORDAN, p. 233, t. c. **n. sp.**
- Toxotropis irroratus*, p. 233, *submetallicus*, p. 234, Texas, SCHAEFFER, J. N. York Ent. Soc. xii, **n. spp.**
- Trachytropis* **n. g.** *T. asper* **n. sp.**, Mexico, JORDAN, p. 266, Nov. Zool. xi.
- Uncifer* **n. g.** near *Gibber*, *U. sticticus* **n. sp.**, Burma, JORDAN, p. 88, Ann. Mus. Genova xli.
- Urodon baudii*=(*granulatus* Schilsky), PIC, p. 218, Bull. Soc. ent. France 1904.
- U. anatolicus*, *rosinæ*, Anatolia, PIC, p. 40, Echange 1904; *U. ciliatus*, Buchara, *granulatus*, Algeria, *korbi*, Anatolia, SCHILSKY, p. 78, Wien. ent. Zeit. xxiii, **n. spp.**
- Xenocerus lautus*, Tonkin, JORDAN, p. 230, Nov. Zool. xi; *X. suturalis*, Ron isld., JORDAN, p. 89, Ann. Mus. Genova xli, **n. spp.**

CERAMBYCIDÆ.

- [Cf. AURIVILLIUS (57, 58), BAECKMANN (74), BROUN (184), CHITTENDEN & WEBSTER (1498), CSIKI (330), DANIEL (345, 347), DAVIS (353), DISTANT (382), FAIRMAIRE (473, 474), FELT & JOUTEL (495B), HAUSER (665), HELLER (673), JORDAN (770), LAMEERE (854, 855), NICOLAS (981), PIC (1063, 1072, 1073), SCHAEFFER (1220).]

LAMEERE continues his revision of *Prionides*, Ann. Soc. ent. Belgique 1904, 9th part, *Callipogonines*; 10th memoir, *Titanines*, t. c. pp. 310-352.

A monograph of the S. African *Cerambycidae*, in which all the species are figured has been published by DISTANT (382). The new species and genera are described by GAHAN, who also remarks, in various places, on the classification of *Cerambycidae*, and the wing-nervures of *Prionides* and allies. No attempt has been made by the Recorder to deal with the synonymy of this memoir.

CSIKI continues his papers on the *Cerambycidae* of Hungary, Rov. Lapok xi, pp. 35 etc.

In Echange xx PIC advertises Part v of his Matériaux pour servir à l'étude des *Longicornes*. I have not seen this work and do not know whether it is a genuine publication. This was denied in the case of previous parts,

Agaleptus n. g. for *Closteromerus quadrinotatus* Pér., GAHAN, p. 122, Distant, Ins. Transvaal i.

Aliturus fuscus, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, n. sp.

Anauxesis simplex, Brit. E. Africa, JORDAN, p. 365, Nov. Zool. xi, n. sp.

Anisogaster brunneus, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, n. sp.

Anoplistes jacobsoni, Syr-Darja, BAECKMANN, p. 312, Rev. Russe Ent. 1904, n. sp.

Artelida caligata, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii, n. sp.

Ataxia spinicauda, Florida, SCHAEFFER, p. 224, J. N. York Ent. Soc. xii, n. sp.

Bisaltus bimaculatus, Bolivia, AURIVILLIUS, p. 207, Ent. Tidskr. xxv, n. sp.

Cedomæa blucheaui, *nebulosa*, p. 259, *griseotincta*, p. 260, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, n. spp.

Calanthemis hauseri, Brit. E. Africa, JORDAN, p. 364, Nov. Zool. xi, n. sp.

Callergates subg. n. of *Ergates* for *E. gaillardoti*, of which *akbesianus* PIC is synonym, LAMEERE, p. 47, Ann. Soc. ent. Belgique xlviii.

Callipogon (*Eoxenus*), natural history and systematic notes, SEMENOV, pp. 220-224, Rev. Russe Ent. iv.

C. beckeri, Mexico, p. 56, *C. (Orthomegas) pehlkei*, Peru, p. 60, *C. (Callomegas) proletarius*, Porto Rico, p. 66, LAMEERE, Ann. Soc. ent. Belgique xlviii, n. spp.

Callomegas subg. n. of *Callipogon*, p. 64, for *C. sericeus* Ol., and *C.*, sp. n., LAMEERE, t. c.

Caloclytus krantzii, Transvaal, GAHAN, pl. xi, fig. 19, p. 123, Distant, Ins. Transvaal i, n. sp.

Curtallum ebulinum, natural history, XAMBEU, pp. 45-58, Soc. Pyrenees-or xlv.

Ceroplesis millingeni, Arabia, PIC, Mat. Long. 4 [not seen by Recorder] ? n. sp.

Closteromerus regalis, Transvaal, DISTANT, pl. xi, fig. 7, p. 121, Ins. Transvaal i, n. sp.

Clytus rhamni var. n. *longicollis*, REITTER, p. 82, Wien. ent. Zeit. xxiii.

C. fulvohirsutus, *raddensis*, Siberia, PIC, p. 18, Echange 1904; *C. gulekanus*, Taurus, PIC, p. 65, t. c. : n. spp.

Cochliopselaphus catherina var. n. *maricovenssis*, DISTANT, p. 141, Ins. Transvaal i.

Coptoeme n. g. near *Temnopsis*, p. 313, *C. oculata*, *triguttata* n. spp., Africa, p. 314, AURIVILLIUS, Arkiv Zool. i.

Coptops nivisparva, Tonkin, FAIRMAIRE, p. 145, Mission Pavie iii, n. sp.

Cordylomera elegans, Transvaal, DISTANT, pl. x, fig. 6, p. 115, Ins. Transvaal i, n. sp.

- Crossotus bimaculatus*, E. Africa, AURIVILLIUS, p. 323, Arkiv Zool. i; *C. penicillatus*, Transvaal, GAHAN, p. 146, pl. xiv, fig. 10, Distant, Ins. Transvaal. i; *C. hovanus*, Madagascar, FAIRMAIRE, p. 257, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Ctenoscelis, atra*, larva, HELLER, p. 388, Stettin Ent. Zeit. lxx.
- Cymatura spumans*=(*mashuna* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Cyrtocris n. g. Theocrides*, p. 321, *C. fulvicornis n. sp.*, E. Africa, p. 322, AURIVILLIUS, Arkiv Zool. i.
- Dere nigrita*, Transvaal, GAHAN, pl. xi, fig. 22, p. 124, Distant, Ins. Transvaal. i, **n. sp.**
- Derolus brunneipennis*, Transvaal, GAHAN, pl. x, fig. 5, p. 113, t. c. **n. sp.**
- Desmiphora grisea*, Bolivia, AURIVILLIUS, p. 208, Ent. Tidskr. xxv, **n. sp.**
- Diadelia atomosparsa*, Madagascar, FAIRMAIRE, p. 260, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Diaxenes dendrobii* in N. America, SCHWARZ, p. 21, P. ent. Soc. Washington vi.
- Dityloderus ? balteatus*, E. Africa, AURIVILLIUS, p. 316, Arkiv Zool. i, **n. sp.**
- Dorcadion*; PIC, in Mat. Long. 4, ii, 4, [not seen by Recorder] discusses some synonymies and varr. and describes some new species; *D. neilense* Esc. and allies, characters and variation, NICOLAS, pp. 35-40, Bol. Sol. Aragon. Ci. nat. iii; *D. varr.* from Spain, NICOLAS, pp. 82, 83, Echange xx; *D. cervæ*, a good species, CSIKI, pp. 189, 199, Rov. Lapok xi.
- D. granulorum*, Spain, PIC, p. 17, Echange 1904; *D. elvira*, Spain, PIC, p. 58, t. c. : **n. spp.**
- Drymochares truquii*, habits, GUERRY, pp. 157-159, Bull. Soc. ent. France 1904.
- Dysphaga tenuipes*, metamorphosis and parasites, GIRAULT, pp. 299, 300, Ent. News Philad. xv.
- Elaphidion* and *Psyrrassa*, characters and components, SCHAEFFER, p. 61, J. N. York Ent. Soc. xii.
- E. subdepressum*, Lower California, SCHAEFFER, p. 222, t. c. **n. sp.**
- Enareta exigua*, Transvaal, GAHAN, p. 152, pl. xv, fig. 7, Distant, Ins. Transvaal. i, **n. sp.**
- Erlandia n. g.* near *Dynamostes*, p. 205, *E. inopinata n. sp.*, Bolivia, p. 206, AURIVILLIUS, Ent. Tidskr. xxv.
- Eugoides n. g.* near *Eugoa*, p. 314, *E. cœruleipennis n. sp.*, E. Africa, p. 315, AURIVILLIUS, Arkiv Zool. i.
- Eunidia plagiata*, pl. xiv, fig. 24, p. 149, *aspersa*, fig. 25, *spilota*, fig. 21, *modesta*, fig. 22, p. 150, *euzonata*, fig. 19, *fasciata*, fig. 20, p. 151, Transvaal, GAHAN, Distant Ins. Transvaal. i, **n. spp.**
- Exocentrus lateralis*, pl. xv, fig. 11, p. 155, *echimulus*, fig. 12, *exiguus*, fig. 14, *inermis*, fig. 13, p. 156, Transvaal, GAHAN, t. c. **n. spp.**
- Freja reticulata*, S. Africa, DISTANT, p. 144, pl. xiv, fig. 4, Ins. Transvaal. i, **n. sp.**
- Glenea pygidialis*, E. Africa, *sangirica*, Sanghir, p. 324, *palavensis*, p. 325, *bivittata*, Palawan, *didyma*, Java, p. 326, *glaucescens*, Celebes, *ruft-cauda*, Sumbava, *bisbivittata*, Java, p. 327, *nigriceps*, Malacca, p. 328, AURIVILLIUS, Arkiv Zool. i, **n. spp.**
- Hecyrida plagicollis*, Transvaal, GAHAN, p. 147, pl. xv, fig. 5, Distant, Ins. Transvaal. i, **n. sp.**
- Hercodera pulchella*, Transvaal, GAHAN, pl. x, fig. 24, p. 115, t. c. **n. sp.**
- Hesperophanes griseus*, longevity, larval habits, KÜNCKEL, p. 68, Bull. Soc. ent. France 1904.
- Hoplorama perrieri*, Madagascar, FAIRMAIRE, p. 258, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Hypocrites aureovittatus*, E. Africa, AURIVILLIUS, p. 316, Arkiv Zool. i, **n. sp.**

- Icariotis alboscultata*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii, n. sp.
- Idactus fasciculosus*, E. Africa, AURIVILLIUS, p. 318, Arkiv Zool. i, n. sp.
- Lentalius* n. g. near *Lasiocercis*, p. 256, *L. obliquepictus* n. sp., Madagascar, p. 257, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii.
- Leptura verticalis* and allies to n. subg. *Sphenalia*, p. 355, synonymy and varr., K. DANIEL, pp. 355–371, Munchen. Kol. Zeitschr. ii; *L. distigma* var. n. *lopezbayoi*, LAUFFER, p. 374, Bol. Soc. espan. iv; *L. rubra*, hermaphrodite, BICKHARDT, p. 303, Deutsche ent. Zeitschr. 1904.
- L. (Sphenalia) ariadne*, Crete, p. 355, *erimys*, Asia Minor, p. 356, K. DANIEL, Munchen. Kol. Zeitschr. ii, n. spp.
- Lygrus testaceus*, Transvaal, GAHAN, p. 109, pl. x, fig. 9, Distant, Ins. Transvaal. i, n. sp.
- Lyramela* n. g. near *Lygrus*, p. 109, *L. sulcipennis* n. sp., Transvaal, pl. x, fig. 22, p. 110, GAHAN, t. c.
- Mallodon spinibarbis*, larva, HELLER, p. 391, Stettin Ent. Zeit. lxxv.
- Mallosia*; revision with varr. n. and subg. n. (cf. *Semnosia*), K. DANIEL, pp. 301–314, Munchen. Kol. Zeitschr. ii.
- Marocaulus granicollis*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, n. sp.
- Mimocoptops bipenicillatus*, Madagascar, FAIRMAIRE, p. 256, t. c. n. sp.
- Myrsinus* n. g. *Aphanasides*, *M. modestus* n. sp., Transvaal, pl. x, fig. 21, p. 116, GAHAN, Distant, Ins. Transvaal. i.
- Nemophas helleri*, Key islds., HAUSER, p. 42, Deutsche ent. Zeitschr. 1904, n. sp.
- Neoclytus jouteli*, New Jersey, DAVIS, p. 34, pl. vi, Ent. News Philad. xv; *N. magnus*, Lower California, SCHAEFFER, p. 224, J. N. York Ent. Soc. xii: n. sp.
- Neopolyarthron* is subg. of *Prionus*; *P. angustatus* Jak. = (*ahngerii* Brancs.), SEMENOW, p. 39, Rev. Russe Ent. iv.
- Nicarete albolineatus*, p. 257, *vitticollis*, *submaculosus*, p. 258, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, n. spp.
- Niphoparmena* n. g. near *Mycerinode*s, p. 317, *N. bispinosa* n. sp., E. Africa, p. 318, AURIVILLIUS, Arkiv Zool. i.
- Oberca rosinae*, Amurland, PIC, p. 17, Echange 1904: *O. ulmicola*, Illinois, CHITTENDEN, p. 4, habits and metamorphosis, WEBSTER, pp. 5–13, pls. i, ii, Bull. Illinois Lab. vii: n. spp.
- Obrium obscuripenne*, Amurland, PIC, p. 17, Echange 1904: *O. brunneum*, Lower California, SCHAEFFER, p. 223, J. N. York Ent. Soc. xii: n. spp.
- Oemida* n. g. for *Parame gahani* Dist., GAHAN, p. 106, Distant, Ins. Transvaal. i.
- Omodana* n. g. *Æ. quadrinotata* n. sp., Lydenburg, GAHAN, p. 107, pl. xiii, fig. 5, t. c.
- Olenecamptus nubilis*, Brit. E. Africa, JORDAN, p. 365, Nov. Zool. xi; *O. olenus*, Transvaal, GAHAN, p. 143, pl. xiv, fig. 1, Distant, Ins. Transvaal. i: n. spp.
- Omphalacra* merged in *Nicarete*, FAIRMAIRE, p. 258, Ann. Soc. ent. Belgique xlviii.
- Oncideres stillata*, Bolivia, AURIVILLIUS, p. 208, Ent. Tidskr. xxv, n. sp.
- Oncoderes dejeani*, larva, HELLER, p. 395, Stettin Ent. Zeit. lxxv.
- Pachydissus pauper*, Transvaal, GAHAN, pl. x, fig. 8, p. 113, Distant, Ins. Transvaal. i, n. sp.
- Parandra glabra*, larva, HELLER, p. 383, Stettin Ent. Zeit. lxxv.
- Parmena balteus*, variation, MÜLLER, p. 176, Wien. ent. Zeit. xxiii.
- Pentanodes* n. g. near *Tetranodes*, *P. dietzii* n. sp., Texas, SCHAEFFER, p. 222, J. N. York Ent. Soc. xii.
- Peritragus* n. g. near *Tragiscoschema*, p. 320, *P. nigroapicalis* n. sp., E. Africa, p. 321, AURIVILLIUS, Arkiv Zool. i.

- Phantasis mystica*, Transvaal, DISTANT, p. 127, pl. xi, fig. 13, Ins. Transvaal. i, **n. sp.**
- Philematium hottentotum*=(*capense* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Phytoecia infernalis*, Amurland, PIC, p. 17, Echange 1904, **n. sp.**
- Pogonochærus taygetanus*, Greece, PIC, Mat. Long. iv [not seen by Recorder], **? n. sp.**
- Polyoa lacordairei*, larva, HELLER, p. 392, Stettin Ent. Zeit. lxxv.
- Praonetha fuscopunctata*, p. 260, *bispina*, p. 261, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Prosopocera ertli*, E. Africa, AURIVILLIUS, p. 319, Arkiv Zool. i, **n. sp.**
- Protocallidium* subg. n. for *Callidium angustum*, CSIKI, p. 99, Rov. Lapok xi.
- Psathyrus suturalis*, Transvaal, GAHAN, p. 107, pl. xiii, fig. 1, Distant, Ins. Transvaal. i, **n. sp.**
- Purpuricenæ miniatus*, Tonkin, FAIRMAIRE, p. 145, Mission Pavie iii, **n. sp.**
- Saperda*; monograph of N. American, with illustr. of larval work and of the insects, *S. populnea tulari* subsp. n. p. 70, pl. vii, fig. 6, FELT & JOUTEL, Bull. N. York Mus. lxxiv.
- S. imitans*, Montreal and Massachusetts; FELT & JOUTEL, p. 58, pl. iii, fig. 4, t. c. **n. sp.**
- Semnosia* subg. n. of *Mallosia* for *M. scovitzii*, K. DANIEL, p. 301, Munchen. Kol. Zeitschr. ii.
- Somatidia testudo*, New Zealand, BROUN, p. 127, Ann. Nat. Hist. xiv, **n. sp.**
- Sophonria fulvicollis*, Transvaal, GAHAN, p. 154, pl. xv, fig. 15, Distant, Ins. Transvaal. i, **n. sp.**
- Sphenalia* subg. n., cf. *Leptura*.
- Stenocorus heterocerus* var. n. *homocerus*, DANIEL, p. 206, Munchen. Kol. Zeitschr. ii.
- Sternotomis carbonaria*, Africa, AURIVILLIUS, p. 320, Arkiv Zool. i: *S. euchroma*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Tapinolachnus aurivillianus*, Transvaal, DISTANT, pl. ix, fig. 15, p. 112, Ins. Transvaal. i, **n. sp.**
- Timoreticus imbellis*, Transvaal, GAHAN, pl. xii, fig. i, p. 132, t. c. **n. sp.**
- Toxentes pascoei*, Queensland, p. 21, LAMEERE, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tragocephala gemina*, Transvaal, DISTANT, pl. xii, fig. 13, p. 136, Ins. Transvaal. i, **n. sp.**
- Xixuthrus lineicollis*, larva, and pupa, HELLER, p. 401, Stettin Ent. Zeit. lxxv.
- Xylotrechus quadrupes*, habits, ravages in Tonkin, BOUTAN, C.R. Soc. Biol. cxxxix, pp. 932-934; *X. adspersus* and *pantherinus*, distinguished, SEMENOW, p. 315, Rev. Russe Ent. 1904.
- Zamium incultum*=(*rusticum* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Z. lævicolle*, Brit. E. Africa, JORDAN, p. 364, Nov. Zool. xi, **n. sp.**

BRUCHIDÆ.

[Cf. DANIEL & DANIEL (349), PIC (1069), SCHAEFFER (1220).]

- Bruchus*; synonymical notes, European, SCHILSKY, p. 455, *B. bipustulatus* F. redescribed, Deutsche ent. Zeitschr. 1904.
- B. soarevicius*, Madagascar, PIC, p. 35, Echange 1904; *B. arizonensis*, p. 229, *gibbithorax*, p. 230, Arizona, *texasus*, Brownsville, p. 231, SCHAEFFER, J. N. York Ent. Soc. xii: **n. spp.**
- Caryoborus pallidus*, food, BARGAGLI, p. 3, Bull. Soc. ent. Ital. xxxvi.
- Laria stylophora*, Constantinople, K. DANIEL, p. 87, Munchen. Kol.

Zeitschr. ii; *L. mellyi*, Egypt, *monstrosicornis*, Anatolia, PIC, p. 40, Echange 1904; *L. tonkinae*, Tonkin, PIC, p. 42, Echange xx: **n. spp.**
Spermophagus eustrophoides, Florida, SCHAEFFER, p. 228, J. N. York Ent. Soc. xii, **n. sp.**

CHRYSOMELIDÆ [except *Hispides* and *Cassidides*].

[Cf. ABEILLE (5), DANIEL (343, 349), FAIRMAIRE (473), JACOBY (742-749), JACOBY & CLAVAREAU (750), LEA (863, 864), PIC (1064, 1072, 1077), REITTER (1147), SCHAEFFER (1220), SEMENOW (1281), WEISE (1502, 1503, 1505).]

The genera and species of *Donaciidae*, JACOBY & CLAVAREAU, in WYTSMAN Gen. Ins. fasc. xxi.

The genera of *Crioceridae*, with lists of species, JACOBY & CLAVAREAU, *Crioceridae*, WYTSMAN Gen. Ins. fasc. xxiii, 40 pp., 5 pls.

Revision of Australian *Cryptocephalides*, and tabulation of the species. We have not dealt in any way with the synonymy in this memoir. LEA, Tr. ent. Soc. London 1904, pp. 329-461, pls. xxii-xxvi.

Acanthonycha peruana, *geniculata*, *dimidiata*, Peru, p. 403, *stali*, Costa Rica, *costatipennis*, p. 404, *antennata*, p. 405, Brazil, JACOBY, P. Z. S. 1904, ii, **n. spp.**

Achenops oneili, Cape Colony, JACOBY, p. 249, op. cit. i, **n. sp.**

Ænidea hauseri=(*Platyxantha clavareau* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.

Æ. nasuta, p. 401, *latifrons*, p. 402, *nilgiriensis*, p. 403, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Agasicles **n. g.** *Halticine*, p. 400, *A. vittata* **n. sp.**, Peru, p. 401, JACOBY, P. Z. S. 1904, ii.

Agetocera flava, Khasia hills, JACOBY, p. 394, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Algoala **n. g.** near *Melasoma*, *A. fulvicollis* **n. sp.**, S. Africa, JACOBY, p. 268, P. Z. S. 1904, i.

Antipha bifasciata, p. 399, *orientalis*, p. 400, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Aphthona nigroscutellata, Galicia, REITTER, p. 82, Wien. ent. Zeit. xxiii; *A. bicolorata*, New Guinea, JACOBY, p. 487, Ann. Mus. Genova xli: **n. sp.**

Apolepis indica, Nilgiri hills, JACOBY, p. 385, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Apophyllia (*Malaxia*) *metallica*, India, JACOBY, p. 397, t. c. **n. sp.**

Argopistes limbaticornis, New Guinea, JACOBY, p. 491, Ann. Mus. Genova xli, **n. sp.**

Atropidius robustus, India, JACOBY, p. 383, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Aulucophora loriana, p. 494, *pallidifasciata*, *rigoensis*, p. 495, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**

Blepharida flavocostata, p. 406, *multimaculata*, p. 407, Mexico, JACOBY, P. Z. S. 1904, ii, **n. spp.**

Brachycaulus posticalis, p. 446, *mamillatus*, *aterrimus*, p. 447, Australia, LEA, Tr. ent. Soc. London 1904, **n. spp.**

Bradamina **n. g.** *Monoleptides*, *B. plicicollis* **n. sp.**, Madagascar, FAIRMAIRE, p. 268, Ann. Soc. ent. Belgique xlviii.

Bradylema transvaalensis, ♂, WEISE, p. 157, Arch. Naturg. lxx, i.

Buphonella murina Gerst. (as *Apophyllia*)=(*elongata* Jac.), WEISE, p. 166, t. c.

Cadmus *T-niger*, p. 449, *calomeloides*, p. 450, *quadrifasciatus*, p. 451, *fasciaticollis*, p. 452, *apicirufus*, p. 453, *perlatus*, *nothus*, p. 454, Australia or Tasmania, LEA, Tr. ent. Soc. London 1904, **n. spp.**

- Calomela dilaticornis*, New Guinea, JACOBY, p. 480, Ann. Mus. Genova xli, **n. sp.**
- Candezea lorice*, p. 508, *sulcatipennis*, p. 509, New Guinea, JACOBY, t. c. **n. spp.**
- Casmenella* **n. g.** *Heteraspina*, *C. natalense* **n. sp.**, Natal, JACOBY, p. 266, P. Z. S. 1904, i.
- Cerophysa andrevesi*, p. 396, *mandarensis*, p. 397, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Chatocnema belli*, India, JACOBY, p. 392, t. c.; *C. lorice*, p. 489, *transversicollis*, p. 490, New Guinea, JACOBY, Ann. Mus. Genova xli : **n. spp.**
- Chalcolampra rufinoda*, Tasmania, LEA, p. 106, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Cheiridella* **n. g.** *Eumolpide*, p. 265, *C. zambesiana* **n. sp.**, Natal, p. 266, JACOBY, P. Z. S. 1904, i.
- Chlamys semicristata*, Venezuela, *balyi*, Mexico, JACOBY, p. 293, Entomologist 1904; *C. trimaculata*, p. 197, *donckieri*, *seminigra*, p. 198, *semibrunnea*, p. 199, Brazil, *fulvimana*, Costa Rica, *surinamensis*, Surinam, p. 200, *centromaculata*, Brazil, p. 201, *constrictipennis*, Peru, p. 202, JACOBY, t. c. : **n. spp.**
- Chrysochloa tristis*, *rugulosa*, *collucens*, *fenestrellana*, relations, WEISE & DANIEL, pp. 234-237, Munchen. Kol. Zeitschr. ii.
- Cleoporus variegatus*, p. 387, *maculicollis*, p. 388, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Cleorina semipurpurea*, p. 473, *viridissima*, p. 474, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**
- Cænobiüs melanocephalus*, Mashonaland, JACOBY, p. 248, P. Z. S. 1904, i, **n. sp.**
- Colasposoma cyaneocupreum*=(*junodi* Pér.), JACOBY, p. 262, t. c.
- C. sheppardi*, p. 258, *pusillum*, p. 259, *piceitarse*, p. 260, *balyi*, *beiraense*, pl. xvii, fig. 10, p. 261, *mirabile*, p. 262, Africa, JACOBY, t. c. **n. spp.**
- Coptocephala rubicunda* var. *n. fuentei*, FIGUEROA, p. 374, Bol. Soc. espan. iv.
- Corynodes plagiatus*, Nyassa, WEISE, p. 162, Arch. Naturg. lxx, i, **n. sp.**
- C. clypeatus*, India, JACOBY, p. 389, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Crepidodera*, revision of Palearctic, with synonymy and varr. n., remarks on Japanese, J. DANIEL, pp. 237-297, Munchen. Kol. Zeitschr. ii; *C. femorata* var. *n. kossmanni*, GERHARDT, p. 78, Zeitschr. Ent. Breslau xxix.
- C. sabauda*, Savoy, PIC, p. 57, Echange xx; *C. brevicollis*, Italy, p. 249, *nobilis*, Alps, p. 281, J. DANIEL, Munchen. Kol. Zeitschr. ii; *C. longicornis*, Peru, JACOBY, p. 412, P. Z. S. 1904, ii : **n. spp.**
- Crioceris fasciata*, E. Africa, WEISE, p. 158, Arch. Naturg. lxx, i, **n. sp.**
- C. discoidalis*, *dilutipes*, *fusco-picta*, p. 262, *semirufa*, p. 263, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *C. fasciatipennis*, *mala-barica*, India, JACOBY, p. 381, t. c. : **n. spp.**
- Cryptocephalus vittula* var. *n. lugubris*, DEMAISON, p. 286, Bull. Soc. ent. France 1904; *C. raddei rosine* subsp. n., PIC, p. 27, Echange 1904; *C. smaragdulus* F.=(*aggregatus* Jac.), *C. oblongosignatus* var.=(*severini* Jac.), WEISE, p. 16, Deutsche ent. Zeitschr. 1904; *C. polyhistor*=(*mandibularis* Suffr. and *Achaenops mandibularis* Jac.), JACOBY, p. 247, P. Z. S. 1904, i.
- C. championi*, Spain, J. DANIEL, p. 92, Munchen. Kol. Zeitschr. ii; *C. centralis*, p. 159, *reinecki*, Natal, *moseri*, Usambara, p. 160, WEISE, Arch. Naturg. lxx, i; *C. sheppardi*, pl. xvii, fig. 6, p. 242, *oneili*, fig. 7, *subconnectens*, fig. 3, p. 243, *sobrinus*, *beiraensis*, fig. 5, p. 244, *capensis*, p. 245, *semiregularis*, *sexplagiatus*, fig. 4, p. 246, *flavofrontalis*, p. 247, Africa, JACOBY, P. Z. S. 1904, i; *C. nigrosparus*, *nigrotibialis*, p. 264, *impressidorsis*, *multinotatus*, *anticus*, p. 265, *piceorufus*, *scripticollis*,

- anthrax*, *lesicollis*, p. 266, *diversipes*, *cyaneocostatus*, *nedator*, p. 267, *eucharis*, p. 268, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii: *C. subcostatus*, India, JACOBY, p. 382, Ann. Soc. ent. Belgique xlviii; *C. confinis*, *mediocris*, p. 392, *appendiculatus*, p. 393, *vicarius*, p. 394, *blandus*, p. 395, *quadratiennis*, p. 396, *compositus*, p. 397, *aurifer*, *purpureotinctus*, p. 398, *clarus*, p. 399, *melanopus*, p. 400, *variipennis*, p. 401, *clypealis*, p. 402, *rubicundus*, *rutilans*, p. 403, *larinus*, p. 404, *cariniventris*, p. 405, *stenocerus*, p. 406, *sobrinus*, p. 407, *pallens*, p. 408, *liliputanus* (Tasmania), p. 409, *tenebricosus*, *distortus*, p. 410, *rufoterminalis*, p. 412, *conspiciendus*, p. 413, *metallicus*, *bazionus*, p. 414, *comptus*, p. 415, *minusculeus*, p. 416, *T-viridis*, p. 417, *serenus*, p. 418, *scabiosus*, p. 419, *incoctus*, p. 420, *comosus*, *convexicollis*, p. 421, *ornatiennis*, p. 422, *cælestis*, p. 423, *costipennis*, p. 424, Australia, LEA, Tr. ent. Soc. London 1904; *C. arizonensis*, Pinal Mts., p. 225, *brunneovittatus*, p. 226, Texas, SCHAEFFER, J. N. York Ent. Soc. xii: **n. spp.**
- Cynorta nigrobasalis*, India, JACOBY, p. 400, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Damius tibialis*, E. Africa, WEISE, p. 158, Arch. Naturg. lxx, i; *D. strigatipes*, p. 239, *trifasciata*, pl. xvii, fig. 9, p. 240, Africa, JACOBY, P. Z. S. 1904, i: **n. spp.**
- Demotina andreweesi*, p. 383, *fulvohirsuta*, p. 384, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Desmogramma nigripes*, S. America, JACOBY, p. 517, Arkiv Zool. i, **n. sp.**
- Diabrotica nordenskiöldi*, Argentina, JACOBY, p. 521, t. c. **n. sp.**
- Diacontha kolbei* (= *conradi* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i; *D. binaculata* to *Agelastica*, WEISE, p. 166, t. c.
- Diandichus foveiventris*, W. Australia, LEA, p. 425, Tr. ent. Soc. London 1904, **n. sp.**
- Diorctus letus*, China, WEISE, p. 161, Arch. Naturg. lxx, p. 161, **n. sp.**
- Disonycha amazonica*, Amazons, p. 401, *peruana*, *albicincta*, p. 402, Peru, JACOBY, P. Z. S. 1904, ii, **n. spp.**
- Donacia microcephala*, Asia Minor, J. DANIEL, p. 89, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Echtrusia cupensis*, Cape Colony, JACOBY, p. 264, P. Z. S. 1904, i, **n. sp.**
- Epitrix aeneicollis*, Argentina, JACOBY, p. 519, Arkiv Zool. i, **n. sp.**
- Eubrachys oneili*, S. Africa, JACOBY, p. 263, P. Z. S. 1904, i, **n. sp.**
- Eumæa interrupta*, New Guinea, JACOBY, p. 510, Ann. Mus. Genova xli, **n. sp.**
- Euphitreu indica*, Nilgiri hills, JACOBY, p. 391, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Eurydemus marginatus* Jac. 1903, cf. id. 1900, WEISE, p. 167, Arch. Naturg. lxx, i.
- Eurydemus nigriceps*, p. 249, *quadrinaculatus*, *geniculatus*, pl. xvii, fig. 12, p. 250, Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Euryope barkeri*, Natal, JACOBY, p. 258, t. c. **n. sp.**
- Exosoma flavomarginatum* Jac. = (*Hallirhotius marginatus* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.
- Fidia clematis*, Texas, SCHAEFFER, p. 227, J. N. York Ent. Soc. xii, **n. sp.**
- Galeruca dorsata* Say, DURY, p. 53, Ent. News Philad. xv.
- G. sexcostata*, Kashmir, JACOBY, p. 405, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Galerucella luteola*, metamorphosis, REVON, p. 261, Naturaliste 1904.
- G. interrupta*, Mendoza, JACOBY, p. 523, Arkiv Zool. i, **n. sp.**
- Gronovius n. g. G. imperialis*, p. 499, *andaiensis*, p. 500, **n. spp.**, New Guinea, JACOBY, Ann. Mus. Genova xli.
- Gynandrophthalma ochropus* Har. = (*Ætheomorpha cærulea* Jac.), WEISE, p. 159, Arch. Naturg. lxx, i.

- G. salisburyensis*, p. 240, *varicolor*, p. 241, *hirtifrons*, p. 242, S. Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Haltica bicolora*, New Guinea, JACOBY, p. 482, Ann. Mus. Genova xli ; *H. boliviana*, S. America, JACOBY, p. 517, Arkiv Zool. i : **n. spp.**
- Haplosoma nilgiriensis*, India, JACOBY, p. 396, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Haptoscelis melanocephala* var. *n. baltica*, GERHARDT, p. 368, Deutsche ent. Zeitschr. 1904.
- Hermesia varicolor*, Argentina, JACOBY, p. 514, Arkiv Zool. i, **n. sp.**
- Hippuriphila catharineæ*, Brazil, JACOBY, p. 412, P. Z. S. 1904, ii, **n. sp.**
- Horatopyga reinecki*, Natal, WEISE, p. 163, Arch. Naturg. lxx, i, **n. sp.**
- Hyperaxys variegata*, India, JACOBY, p. 385, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Isnus suturalis*, Natal, JACOBY, p. 248, P. Z. S. 1904, i, **n. sp.**
- Itylus n. g.* for *Fulcra bicolor*, JACOBY, p. 497, Ann. Mus. Genova xli.
- Jacobyia viridis*, Niger, WEISE, p. 167, Arch. Naturg. lxx, i, **n. sp.**
- Khasia andrevesi*, India, JACOBY, p. 398, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Labidostomis (Chlorostola) nevadensis*, Spain, J. DANIEL, p. 91, Munchen. Kol. Zeitschr. ii ; *L. testaceipes*, p. 93, *delagrangei*, p. 94, Syria, PIC, Echange xx : **n. spp.**
- Lactica nicotinae*, Mexico, p. 396, *decorata*, p. 397, *maculicollis*, *posticata*, p. 398, *disicollis*, *rufobrunnea*, *baeri*, p. 399, *argentinensis*, Tucuman, p. 400, JACOBY, P. Z. S. 1904, ii, **n. spp.**
- Lcfverrea fulvicollis*, Natal, JACOBY, p. 263, P. Z. S. 1904, i, **n. sp.**
- Lema weisci*, p. 230, *malvernensis*, *gerstaeckeri*, p. 231, *graminis*, *nigro-frontalis*, p. 232, *athiopica*, p. 233, pl. xvii, fig. 1, *humeronotata*, fig. 2, p. 234, *hirtipennis*, p. 235, Africa, JACOBY, t. c. ; *L. crispatifrons*, Madagascar, FAIRMAIRE p. 262, Ann. Soc. ent. Belgique xlviii ; *L. paradoxa*, Pondicherry, JACOBY, p. 380, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Liniscus interstitialis*, Beira, JACOBY, p. 254, P. Z. S. 1904, i, **n. sp.**
- Lochmæa tropica* redescribed, JACOBY, p. 522, Arkiv Zool. i.
- Longitarsus kanaraensis*, p. 389, *fulvobrunneus*, p. 390, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Loxopleurus lateriflavus*, p. 430, *pallidipes*, *lugubris*, p. 431, *mixtus*, p. 433, *acutetus*, p. 434, *castor*, *pollux*, p. 435, *mitificus*, *dolens*, p. 436, *microscopicus*, p. 437, *marginipennis*, p. 438, *castigatus*, p. 439, *inconstans*, p. 440, *virgatus*, *fuscitarsis*, p. 441, *contiguus*, p. 442, *absonus*, p. 443, *immaturus*, 444, *disconiger*, p. 445, Australia or Tasmania, LEA, Tr. ent. Soc. London 1904, **n. spp.**
- Luperodes obesa*, India, JACOBY, p. 398, Ann. Soc. ent. Belgique xlviii ; *L. lateralis*, Solomon Islands, JACOBY, p. 296, Entomologist 1904 : **n. spp.**
- Luperus lorææ papuanus*, New Guinea, JACOBY, p. 505, Ann. Mus. Genova xli, **n. spp.**
- Macetes rugicollis*, *pusilla*, Natal, JACOBY, p. 257, P. Z. S. 1904, i, **n. spp.**
- Macrolopha* ; constituents, JACOBY, p. 235, t. c.
- Malacodora n. n.* for *Malacosoma* Chev., BEDEL, p. 236, Abeille xxx.
- Malegia caffer*, Caffraria, PIC, p. 20, Echange 1904 ; *M. pallidipes*, Madagascar, p. 35, *donckieri*, Arabia, p. 36, PIC, t. c. : **n. spp.**
- Mastostethus nigrovarians*, *funereus*, p. 63, *femoratus*, *erichsoni*, p. 64, *lacordairei*, *argentinensis*, p. 65, *nigricollis*, *balyi*, p. 66, *bolivianus*, *quadriplagiatus*, p. 67, S. America, JACOBY, Entomologist 1904, **n. spp.**
- Megalognatha usambarica*, *simplex*, p. 168, *apicalis*, p. 169, Africa, WIESE, Arch. Naturg. lxx, i, **n. spp.**
- Melasoma salicivora* varr. *n. complcta*, *deformata*, JACOBSON, p. xv, Annuaire 1904. [VOL. XLI.]

- Mus. St. Petersb.* viii; *M. spinata, discoidalis, unicolor*, validity queried, WEISE, p. 164, *Arch. Naturg.* lxx, i.
- Menius brevicornis*, pl. xvii, fig. 11, Beira, JACOBY, p. 251, *P. Z. S.* 1904, i, n. sp.
- Mimastra suturalis, scutellata*, India, JACOBY, p. 395, *Ann. Soc. ent. Belgique* xlviii, n. spp.
- Miopristis braunsi*, p. 235, *oneili*, pl. xvii, fig. 8, *zambesiana*, p. 236, *brevitarsis*, p. 237, Africa, JACOBY, *P. Z. S.* 1904, i, n. spp.
- Monolepta nilgiriensis*, p. 403, *duvivieri, nigrimana*, p. 404, *bimaculicollis*, p. 405, India, JACOBY, *Ann. Soc. ent. Belgique* xlviii; *M. bicoloripes*, p. 506, *hieroglyphica*, p. 507, *boisduvali*, New Guinea, p. 508, JACOBY, *Ann. Mus. Genova* xli : n. spp.
- Morokasia* n. g. *M. nigromaculata* n. sp., New Guinea, JACOBY, p. 498, *Ann. Mus. Genova* xli.
- Mouhotina salomonensis*, Solomon Islands, JACOBY, p. 295, *Entomologist* 1904, n. sp.
- Myochrous magnus*, Texas, SCHAEFFER, p. 228, *J. N. York Ent. Soc.* xii, n. sp.
- Nerissella* n. g. *Pseudocolaspinae, N. curculionoides* n. sp., Zambesi, JACOBY, p. 267, *P. Z. S.* 1904, i.
- Nodonota argentinensis*, Quinta, JACOBY, p. 515, *Arkiv Zool.* i, n. sp.
- Nodostoma camerunense*, Africa, JACOBY, p. 253, *P. Z. S.* 1904, i; *N. fulvicorne*, India, JACOBY, p. 387, *Ann. Soc. ent. Belgique* xlviii; *N. minutum*, New Guinea, JACOBY, p. 473, *Ann. Mus. Genova* xli : n. spp.
- Nyctiphanthus bergi*, Lake Balkash, SEMENOW, p. 194, *Horæ Soc. ent. Ross.* xxxvii, n. sp.
- Oides straminea*, Cameroons, WEISE, p. 166, *Arch. Naturg.* lxx, i; *O. kanaraensis*, India, JACOBY, p. 393, *Ann. Soc. ent. Belgique* xlviii; *O. apicipennis*, p. 492, *lorice*, p. 493, New Guinea, JACOBY, *Ann. Mus. Genova* xli : n. spp.
- Oxygona amazonica*, Amazons, *capitata*, Peru, JACOBY, p. 411, *P. Z. S.* 1904, ii, n. sp.
- Pachybrachis rugifer*, France, ABEILLE, p. 281, *Bull. Soc. ent. France* 1904, n. sp.
- Panilurus* n. g. near *Arsipoda*, p. 392, *P. nilgiriensis* n. sp., India, p. 393, JACOBY, *Ann. Soc. ent. Belgique* xlviii.
- Paumomua* n. g. *Atysites, P. sulcicollis* n. sp., New Guinea, p. 513, JACOBY, *Ann. Mus. Genova* xli.
- Pausiris oneili, longicollis, femoralis*, p. 255, *semirugosus*, p. 256, S. Africa, JACOBY, *P. Z. S.* 1904, i, n. spp.
- Phaulosis* n. g. near *Timarcha*, p. 162, *P. æneipennis* n. sp., Cape Good Hope, p. 163, WEISE, *Arch. Naturg.* lxxi.
- Phygasia nigripennis*, India, JACOBY, p. 391, *Ann. Soc. ent. Belgique* xlviii, n. sp.
- Phyllobroticella straminea* = (*simplicipennis* Jac.), WEISE, p. 167, *Arch. Naturg.* lxx, i.
- Phyllotreta ruficeps, costulata*, Africa, WEISE, p. 170, t. c. n. spp.
- Plagioderia subparallela*, Cameroons, WEISE, p. 164, t. c. n. sp.
- Platymela fulvoplagiata*, New Guinea, JACOBY, p. 479, *Ann. Mus. Genova* xli, n. sp.
- Prasona peruviana*, Marcapata, JACOBY, p. 407, *P. Z. S.* 1904, ii, n. sp.
- Prosmidia amana*, Rhodesia, *magna*, E. Africa, WEISE, p. 165, *Arch. Naturg.* lxx, i, n. spp.
- Pseudovongius apicicornis*, Natal, JACOBY, p. 253, *P. Z. S.* 1904, i, n. sp.
- Pseudocolaspis substriata*, Mesopotamia, WEISE, p. 100, *Deutsche ent. Zeitschr.* 1904, n. sp.
- Pseudogona argentinensis*, Argentina, JACOBY, p. 520, *Arkiv Zool.* i; *P.*

- discoidalis*, Argentina, p. 409, *militaris*, Panama, *pallida*, Costa Rica, p. 410, JACOB, P. Z. S. 1904, ii : **n. spp.**
- Pseudosastra* **n. g.** for *Sastra sulcicollis* Jac., JACOB, p. 504, Ann. Mus. Genova xli.
- Psylliodes loriae*, New Guinea, JACOB, p. 488, t. c. **n. sp.**
- Rhembastus insignitus* to *Syagrus*, JACOB, p. 253, P. Z. S. 1904, i.
- Rhypparida obscuripennis*, p. 469, *papuana*, p. 470, *humeronotata*, p. 471, *rivularis*, p. 472, New Guinea, JACOB, Ann. Mus. Genova xli, **n. spp.**
- Sagra humeralis*, Tonkin, JACOB, p. 294, Entomologist 1905, **n. sp.**
- Sastra quadripustulata*, p. 501, *rugicollis*, p. 502, Trobriand Islands, *olivacea*, Fergusson Island, *abdominalis*, N. Guinea, p. 503, JACOB, Ann. Mus. Genova xli, **n. spp.**
- Scelodonta rugipennis*, p. 264, *lefevrei*, p. 266, S. Africa, JACOB, P. Z. S. 1904, i, **n. spp.**
- Schizosternus delicatulus*, p. 426, *trilineatus*, *marmoratus*, p. 427, Australia, LEA, Tr. ent. Soc. London 1904, **n. spp.**
- Sclerophædon orbicularis* Suffr., larva, WEISE, pp. 47, 48, Deutsche ent. Zeitschr. 1904.
- Sebaethe pallidicincta*, India, JACOB, p. 391, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Solenia femorata*, *papuana*, p. 511, *intermedia*, p. 512, New Guinea, JACOB, Ann. Mus. Genova xli, **n. spp.**
- Sophrænella* **n. g.** p. 405, *S. fulva* **n. sp.**, Amazons, p. 406, JACOB, P. Z. S. 1904, ii.
- Sphaeroderma subimpressa*, New Guinea, JACOB, p. 491, Ann. Mus. Genova xli, **n. sp.**
- Stethotes loriae*, p. 475, *integra*, *minuta*, p. 476, New Guinea, JACOB, t. c. **n. spp.**
- Stigmomela* **n. n.** for *Stictomela* Weise, CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- Sutrea triplagiata*, p. 484, *semirugosa*, p. 485, *marginipennis*, p. 486, *lævipennis*, p. 487, New Guinea, JACOB, Ann. Mus. Genova xli, **n. spp.**
- Syagrus fulvimanus*, p. 251, *tristis*, p. 252, Africa, JACOB, P. Z. S. 1904, i, **n. spp.**
- Sybriacus picipes*, Madagascar, FAIRMAIRE, p. 263, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Systema melanocephala*, Peru, *argentinensis*, Tucuman, p. 408, *antennata*, Amazons, p. 409, JACOB, P. Z. S. 1904, ii, **n. spp.**
- Terpmochlorus* **n. g.** near *Antsianaka*, *T. perrieri* **n. sp.**, Madagascar, FAIRMAIRE, p. 269, Ann. Soc. ent. Belgique xlviii.
- Therpis smaragdina*=(*Mesotoma viridipennis* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.
- Timarchella* **n. g.** p. 268, near *Timarcha*, *T. braunsi* **n. sp.**, Cape Colony, p. 269, JACOB, P. Z. S. 1904, i, **n. sp.**
- Titubæa ciliciensis*, Taurus, PIC, p. 57, Échange xx ; *T. umtaliensis*, p. 238, *parvula*, p. 239, Africa, JACOB, P. Z. S. 1904, i, **n. spp.**
- Trichotheca duvivieri*, India, JACOB, p. 386, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Trictiona sulcipennis*, India, JACOB, p. 388, t. c. **n. sp.**
- Trichiophora* **n. g.** *Typophorinae*, p. 478, *T. nigra* **n. sp.**, New Guinea, p. 479, JACOB, Ann. Mus. Genova xli.
- Vitruvia unicolor* Jac. (as *Encorane*)=(*Glabripennis* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.
- Xenidea loriae*, *dimidiaticornis*, New Guinea, JACOB, p. 483, Ann. Mus. Genova xli, **n. spp.**
- Xenolina* **n. g.** near *Lina*, *X. marginata* **n. sp.**, New Guinea, JACOB, p. 481, t. c.
- Yulenia divisa*, New Guinea, JACOB, p. 496, t. c. **n. sp.**

HISPIDÆ and CASSIDIDÆ.

[Cf. FAIRMAIRE (473), GESTRO (595, 596), LESNE (878), MUIR & SHARP (969), SHARP (1285), SPAETH (1327), WEISE (1503, 1504, 1507).]

List of synonyms, *Hispidæ*, WEISE, p. 457, Deutsche ent. Zeitschr. 1904.
 MUIR & SHARP (969) describe larvæ, larval clothing, oothecas of S. African *Cassididæ*.

Acanthodes donckieri, p. 444, *limbata*, p. 445, *viridipennis*, p. 446, S. America, WEISE, Deutsche ent. Zeitschr. 1904, n. spp.

Agathispa n. g. type *Hispa dimidiata* Ol., WEISE, p. 64, Arch. Naturg. lxxi, i.

Agonia femoralis, p. 99, *nigripennis*, p. 100, Sumatra, WEISE, t. c. n. spp.

Amplipalpa, table of species, WEISE, pp. 50–52, t. c.

A. fulviceps, Bolivia, WEISE, p. 49, t. c. n. sp.

Anoplitis vinculata, p. 70, *discrepans*, p. 71, *regularis*, p. 72, *tesseraria*, *marginella*, p. 73, *lepidula*, *signifera*, p. 74, S. America, WEISE, t. c. n. spp.

Asphalesia tuta, Usambara, WEISE, p. 172, t. c. n. sp.

Aspidomorpha assimilis var. n. *elegantula*, SPAETH, p. 75, Ann. Mus. Genova xli; *A. rotunda*, characters and larva, FAIRMAIRE, p. 270, Ann. Soc. ent. Belgique xlviii; *A. puncticosta*, larva, pl. iii, fig. 20, p. 9, ootheca, pl. i, figg. 1–6, 9, p. 2, *A. testa*, larva, pl. iv, fig. 21, p. 10, ootheca, p. 6, *A. confinis*, larva, pl. iv, fig. 22, p. 11, ootheca, pl. ii, figg. 10, 11, p. 6, *A. tigrina*, larva, pl. iv, fig. 23, p. 11, ootheca, pl. ii, figg. 12, 13, p. 7, MUIR & SHARP, Tr. ent. Soc. London 1904.

A. saruwacensis, Borneo, p. 73, *sumatrana*, p. 74, SPAETH, Ann. Mus. Genova xli, n. spp.

Baliosus n. g. near *Chalepus*, p. 64, *B. opifer*, p. 74, *hospes*, p. 75, n. spp., S. America, WEISE, Arch. Naturg. lxxi.

Balyana, validity and synonymy, GESTRO, p. 459, Ann. Mus. Genova xli.

Basipta stolidia, larva, pl. v, fig. 24, p. 12, ootheca, pl. ii, figg. 14–16, p. 7, MUIR & SHARP, Tr. ent. Soc. London 1904.

Brontispa n. g. near *Oxycephala*, *B. froggatti* n. sp., New Britain, SHARP, p. 924, P. Linn. Soc. N. S. Wales xxviii.

Brontispa and *Oxycephala*, characters and taxonomy, GESTRO, pp. 455–459, Ann. Mus. Genova xli.

Callispa unicolor, Rhodesia, WEISE, p. 171, Arch. Naturg. lxx, i, n. sp.

Cassida unimacula, larva, pl. v, fig. 26, p. 14, MUIR & SHARP, Tr. ent. Soc. London 1904.

C. corpulenta, Cameroons, WEISE, p. 173, Arch. Naturg. lxx, i; *C. muirana*, Natal, SHARP, p. 13, pl. v, fig. 25, ootheca, pl. ii, figg. 18, 19, Tr. ent. Soc. London 1904; *C. exsanguis*, p. 270, *ovoidea*, *plicatula*, *rufomicans*, p. 271, *latecincta*, *latericia*, p. 272, *lyrica*, *dorsomicans*, *nigroscutata*, p. 273, *breviuscula*, *fullaciosa*, *nigrotecta*, p. 274, *funebria*, *nigroguttata*, p. 275, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *C. feæ*, Burma, SPAETH, p. 71, Ann. Mus. Genova xli : n. spp.

Cephalodonta soluta, *cincta*, Brazil, p. 58, *vitticollis*, p. 59, *melanospila*, *munda*, p. 60, *matronalis*, p. 61, *mitis*, p. 62, Brazil, WEISE, Arch. Naturg. lxxi, i; *C. calopteroides*, p. 439, *humerosa*, p. 441, *clara*, p. 442, *bruchii*, *donckieri*, p. 443, Brazil, WEISE, Deutsche ent. Zeitschr. 1904 : n. spp.

Cephalotia rosenbergi, *nubila*, p. 55, *bifasciata*, p. 56, Ecuador, WEISE, Arch. Naturg. lxxi, i; *C. interstitialis*, *parenthesis*, p. 437, *fasciata*, p. 438, *tucumana*, p. 439, S. America, WEISE, Deutsche ent. Zeitschr. 1904 : n. spp.

Chalepus cincticollis, p. 64, *forticornis*, p. 65, *consimilis*, *viduus*, p. 66,

- sedulus, pullus*, p. 67, *erichsoni, peruvianus, nigripes*, p. 68, S. America, *metallescens*, Mexico, p. 69, *faustus*, Brazil, p. 70, WEISE, Arch. Naturg. lxxi, i, **n. spp.**
- Charidotis divisa*, Peru, p. 176, *drakei*, Paraguay, *redimita*, Bolivia, WEISE, p. 177, t. c. **n. spp.**
- Cælanomenodera speciosa*, p. 461, *signifera*, p. 462, Congo, GESTRO, Ann. Mus. Genova xli; *C. sculptipennis*, Madagascar, FAIRMAIRE, p. 269, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Coptocycla evanescens* Champ. to *Charidotella*, WEISE, p. 175, Arch. Naturg. lxx, i.
- C. piceidorsis, trizonata*, Madagascar, FAIRMAIRE, p. 276, Ann. Soc. ent. Belgique xlviii; *C. championi*, Costa Rica, p. 174, *suturalis*, Brazil, p. 175, WEISE, Arch. Naturg. lxx, i: **n. spp.**
- Ctenochira aberrata*, Costa Rica, WEISE, p. 176, t. c. **n. sp.**
- Cyanaspis* **n. g.** near *Himatidium*, p. 433, *C. testaceicornis* **n. sp.**, Bolivia, p. 434, WEISE, Deutsche ent. Zeitschr. 1904.
- Dactylispa lateralis*, S. Africa, p. 450, *assamensis*, Assam, p. 452, WEISE, t. c.; *D. chinensis*, p. 102, China, *donckieri*, Congo, *pusilla*, India, p. 103, WEISE, Arch. Naturg. lxxi, i: **n. spp.**
- Decatelia* **n. g.** p. 435, near *Charistena*. *D. lema* **n. sp.**, Bolivia, p. 436, WEISE, Deutsche ent. Zeitschr. 1904.
- Demothispa tricolor, germani*, Bolivia, WEISE, p. 54, Arch. Naturg. lxxi, i, **n. spp.**
- Dichirispa funebris*, Fernando Po, GESTRO, p. 518, Ann. Mus. Genova xli, **n. sp.**
- Gonophora hæmorrhoidalis* var. **n. undulata**, WEISE, p. 98, Arch. Naturg. lxxi, i.
- G. funebris*, Borneo, WEISE, p. 99, t. c. **n. sp.**
- Hispa testacea*, larval habits, trophi, LESNE, pp. 68-70, Bull. Soc. ent. France 1904.
- H. aurichalcea*, E. Africa, WEISE, p. 171, Arch. Naturg. lxx, i; *H. opaca*, S. Africa, WEISE, p. 448, Deutsche ent. Zeitschr. 1904; *H. linnei*, N. Guinea, *boutani*, Tonkin, p. 101, *gracilicornis*, Cameroons, p. 102, WEISE, Arch. Naturg. lxxi: **n. spp.**
- Javeta gestroi*, Borneo, WEISE, p. 97, t. c. **n. sp.**
- Laccoptera excavata*, larva, p. 15, *ootheca*, p. 8, MUIR & SHARP, Tr. ent. Soc. London 1904.
- Leptispa latifrons*, Ceylon, *nigra*, Pondichery, WEISE, p. 436, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Megapyga brevis*, Mentawai, SPAETH, p. 69, Ann. Mus. Genova xli, **n. sp.**
- Metriona ferrarii*, Java, SPAETH, p. 77, t. c. **n. sp.**
- Millinaspis* **n. g.** for *Calliaspis cassidioides*, Boh., WEISE, p. 433, Deutsche ent. Zeitschr. 1904.
- Octhispa 4-notata*, p. 81, *proba*, p. 82, *peruana*, p. 83, S. America, WEISE, Arch. Naturg. lxxi, i, **n. spp.**
- Odontionycha sublesta*, Usambara, WEISE, p. 173, t. c. **n. sp.**
- Oxycephala fasciata, dilutipes*, New Guinea, WEISE, p. 95, t. c. **n. spp.**
- Pistosis* **n. g.** p. 93, *P. maculata* **n. sp.**, Celebes, p. 95, WEISE, t. c.
- Platypria natalensis* (Pér.), S. Africa, pp. 516, 517, *paucispinosa*, S. Thomé isld., p. 520, *fea*, Principe isld., p. 522, GESTRO, Ann. Mus. Genova xli, **n. spp.**
- Probænia* **n. g.** *Uroplatinorum*, p. 447, for species of *Odontota* and *Uroplata*, WEISE, Deutsche ent. Zeitschr. 1904; *P. variolaris*, p. 76, *tessellata*, p. 77, *vittulosa*, p. 78, *nigrîtarsis, tibiella*, p. 79, *clara*, p. 80, S. America, WEISE, Arch. Naturg. lxxi, i: **n. spp.**
- Promecothea antiqua*, New Pomerania, WEISE, p. 97, t. c. **n. sp.**
- Prosopodonta balyi*=(*costata* B.), WEISE, p. 58, t. c. **n. sp.**
- Psilurnus donckieri*, Brazil, WEISE, p. 57, t. c. **n. sp.**

- Rhacocassis* n. g. p. 76, for *Coptocycla flavoplagiata*, with var. n. *modiglianii*, p. 77, SPAETH, Ann. Mus. Genova xli.
Solenispa n. g. for *Cophalolia angusticollis* Wat. and *S. impressicollis* n. sp., Bolivia, WEISE, p. 53, Arch. Naturg. lxxi, i.
Stenispa luridipennis, Brazil, WEISE, p. 52, t. c. n. sp.
Thoracispa, characters, *T. dregei*, figure, GESTRO, pp. 463–465, Ann. Mus. Genova xli.
T. brunni, S. Africa, WEISE, p. 449, Deutsche ent. Zeitschr. 1904, n. sp.
Uroplata kraatzi, p. 83, *gracilis*, p. 84, *postica*, p. 85, *apicicornis*, p. 86, *maculata*, *maculicollis*, p. 87, *ferruginea*, p. 88, *orphanula*, p. 89, *pusilla*, p. 90, *illustris*, *clienta*, p. 91, *soror*, *nupta*, p. 92, S. America, WEISE, Arch. Naturg. lxxi, i, n. spp.

EROTYLIDÆ.

- Dasydactylus cnici*, Texas, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii, n. sp.
Languria, N. American, table, SCHAEFFER, pp. 198–200, t. c.; food-habits of larvæ, N. American, CHITTENDEN, pp. 27–30, J. N. York Ent. Soc. xii.
L. apicalis, Texas, SCHAEFFER, p. 198, t. c. n. sp.
Pharaxonotha kirschi=(*Thalisella conradti* Gorh.), ARROW, p. 36, Ent. Mag. xl.
Triplax marseuli var. n. *discicollis*, REITTER, p. 156, Wien. ent. Zeit. xxiii.
Tritoma sibirica, *consobrina* and *sobrina*, note, SEMENOW, p. 303, Rev. Russe Ent. 1904.

ENDOMYCHIDÆ.

- [Cf. PIC (1077), REITTER (1145, 1146, 1152), SEMENOW (1278).]
Aclommysa n. g. near *Clemmys*, p. 41, *A. solarii* n. sp., Valle Lucano, p. 42, REITTER, Wien. ent. Zeit. xxiii.
Alexia maritima, Alpes maritimes, REITTER, p. 45, t. c. n. sp.
Dapsa roddiana, W. Siberia, SEMENOW, p. 289, Rev. Russe. Ent. 1904, n. sp.
Lycoperdina (Golgia) jakolevi, W. Siberia, SEMENOW, p. 290, t. c. n. sp.
Mycetina inapicalis, Syria, PIC, p. 90, Echange xx, n. sp.
Spherosoma (Alexia) solarii, Valle Lucano, REITTER, p. 155, Wien. ent. Zeit. xxiii, n. sp.

COCCINELLIDÆ.

- [Cf. SCHWARZ (1262), STEBBING (1336), WEISE (1506).]
 WEISE, Deutsche ent. Zeitschr. 1904, pp. 357–364, makes a series of synonymical observations, too numerous to be here reproduced, on the *Coccinellidæ* of the Biologia Centrali-Americana Vol. vii.
Alexia, see *Eudomychidæ*.
Chilocorus similis, life history, SMITH, pp. 589–595, Rep. New Jersey exp. Stat. 1903.
Coccinella lyncea, *quatuordecimprotulata*, varr. and sexes, MÜLLER, p. 177, Wien. ent. Zeit. xxiii; *C. bipunctata* ab. n. *impunctata*, EVERTS, p. 174, Tijdschr. Ent. xlvii.
Hyperaspis reppensis, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.
Novius cardinalis in Italy, natural history, RIBAGA, pp. 299–323, Riv. Patol. Veg. x.
Pseudowisea suturalis, California, SCHWARZ, p. 118, P. ent. Soc. Washington vi, n. sp.
Vedalia guerini, natural history, STEBBING, pp. 155–162, pl. xvii, J. Linn. Soc. London xxix.

PROTERRHINIDÆ.

- Correction, FAUVEL, p. 208, Rev. Ent. franc. 1904.

(B.) HYMENOPTERA.

The names *Apocrita* and *Symphyla* should be used, not Konow's *Chalastogastra* etc., ENDERLEIN, p. 146, Zool. Anz. xxviii.
The hypopharynx of *Hymenoptera*, HILZHEIMER, Jena. Zeitschr. xxxix, pp. 119-150, pl. ii.
Hymenoptera of Alaska, ASHMEAD (55), KINCAID (800), PERGANDE (1026).
Oogenesis in Bees etc., BRUNELLI (193).

ACULEATA.

APIDÆ.

[Cf. ADLERZ (15), ALFKEN (23, 24), ASHMEAD (44, 47, 48, 49), BENTON (101), BRÈTHES (179), CAMERON (230, 232, 233, 234), CAUDELL (252), COCKERELL (280-286, 289, 291-293), CRAWFORD (326, 327), DITTRICH (394), DREYLING (403, 404), DUCKE (415), FRIESE (541-552), FRIESE & WAGNER (553), GRAENICHER (619), GRÜNBERG (642), HOLMBERG (697), HOOPER (703), HÜPPNER (705), JACOBS (738), KOPP (840), MORICE (957, 959), NURSE (985), PIERCE (1086), ROBERTSON (1181, 1182), SAUNDERS (1214, 1215), SAUSSURE (1218), SCHROTTKY (1245), SCHULZ (1253, 1255), SEMICHON (1282, 1283), SWENK (1357, 1358), TITUS (1389, 1390), VACHAL (1424-1427), VIERECK (1448, 1450, 1451, 1454).]

Synopsis, or analysis, of classification of bees, families, ROBERTSON, pp. 37-43, Canad. Ent. xxxvi.

Conspectus of bees of Argentina, 91 species, HOLMBERG, An. Mus. Buenos Aires (3) ii, pp. 377-468.

COCKERELL gives various notes on bees described by Smith, Canad. Ent. xxxvi, pp. 301-304.

The branched hairs, CAUDELL, pp. 5, 6, P. ent. Soc. Washington vi.

Wax-organs, *Melipona* group, DREYLING, Zool. Anz. xxviii, pp. 204-210, cuts.

Wax secretion *A. mellifica*, DREYLING, p. 216, Zool. Anz. xxvii.

Bees as carriers of triungulin, PIERCE, pp. 172-180, Stud. Univ. Nebraska iv.

Bees and flowers, WERY, Bull. Ac. Belgique 1904, pp. 1211-1261.

Bee's poison, PHISALIX (1048-1050).

Some bees-nest insects, Brazil, WASMANN, pp. 482-487, Rev. Mus. Paulista vi.

Acanthopus jheringi=(*excellens* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.

Acanthosmiades ashmeadii, Oregon, TITUS, p. 101, P. ent. Soc. Washington vi, n. sp.

Agapostemon azarae, p. 465, *argentinus*, *coryliventris*, p. 466, *multicolor*, p. 467, *experiendus*, p. 468, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii, n. spp.

Ammobates solitarius, Quetta, NURSE, p. 570, J. Bombay Soc. xv, n. sp.

Ancyloscelis ecuadorius, Guyaquil, p. 22, *duckei*, p. 23, *gigas*, p. 24, Para, FRIESE, Zeitschr. Hym. Dipt. iv; *A. baeri*, p. 16, *flitarsis*, p. 17, *tormalis*, *girardi*, p. 18, *humulis*, *analis*, p. 19, S. America, VACHAL, Rev. Ent. franc. xxiii : n. spp.

- Andrena*, remarks on 10 spp. from Greece described by Brullé, ALFKEN, pp. 289–295, Zeitschr. Hym. Dipt. iv; *A. curvungula* and *pandellei*, ALFKEN, p. 320, Zeitschr. Hym. Dipt. iv; *A. parviceps* ♂, FREY-GESSNER, p. 57, Soc. ent. xix; *A. polemonii* to *Ptilandrena*, ROBERTSON, p. 278, Canad. Ent. xxvi.
- A. frey-gessneri*, Switzerland, ALFKEN, p. 81, Soc. ent. xix; *A. inoa*-Himalaya, CAMERON, p. 210, Entomologist 1904; *A. unita*, *balucha*, p. 558, *peskinica*, p. 559, *niveobarbata*, *cara*, p. 560, *hera*, *flavofacies*, p. 561, *marmora*, p. 562, *dolorosa*, *collata*, p. 563, *legata*, *biemarginata*, p. 564, *flagella*, p. 565, *halictoides*, *satellita*, p. 566, India, NURSE, J. Bombay Soc. xv; *A. chlorogaster*, *piperi*, *chlorinella*, *angustitarsata*, *mustelicolor*, Oregon etc., VIERECK, p. 196, Canad. Ent. xxxvi; *A. trachandrenoides*, *pulverulenta*, *seminigra*, p. 221, *indotata*, *solidula*, *junonia*, *compactiscopa*, *neurona*, p. 222, *transnigra*, *seattlensis*, *chapmanae*, *pullmani*, *longihirtiscopa*, *vicinoides*, p. 223, *saccata*, *hemileuca*, *clypeoporaria*, *advarians*, *harveyi*, p. 224, *asmi*, *semipolita*, *xanthostigma*, *subcandida*, *decussata*, *deccussatula*, p. 225, *subdistans*, *plana*, *scurra*, *nubilipennis*, *v-scripta*, p. 226, Oregon etc., VIERECK, Canad. Ent. xxxvi; *A. fragariana*, p. 64, *wheeleri*, p. 65, *persimilis*, p. 66, Wisconsin, GRAENICHER, Ent. News Philad. xv; *A. vierecki*, p. 26, *leptanthi*, p. 27, Colorado, COCKERELL, Ann. Nat. Hist. xiv : n. spp.
- Anthidium flavomarginatum* var. n. *ecuadorium*, FRIESE, p. 184, Zeitschr. Hym. Dipt. iv; *A. porterae* var. n. *amabile*, COCKERELL, p. 7, Entomologist 1904; *A. bicoloratum* var. *tucumanum*, VACHAL, p. 14, Rev. Ent. franc. xxiii; *A. paulinieri* ♂, *bicolor*, sexes, p. 101, *niveocinctum*, ♀, *cordatum* ♂, p. 105, FRIESE, Zeitschr. Hym. Dipt. iv; *A. sticticum* to *Dianthidium*, COCKERELL, p. 234, Entomologist 1904; *A. jugatorium* to *Dianthidium*, COCKERELL, p. 84, Ent. News Philad. xv.
- A. opacum*, *cucullatum*, p. 102, *zebra*, *braunsi*, p. 103, *abdominale*, *nigritarse*, p. 104, *nigripes*, *fulleborni*, p. 105, Africa, FRIESE, Zeitschr. Hym. Dipt. iv; *A. junodi*, Transvaal, FRIESE, p. 299, t. c.; *A. aricensis*, Chile, 22-*punctatum*, p. 182, *buchwaldi*, p. 183, *dentiventris*, p. 184, Ecuador, FRIESE, t. c.; *A. melanotrichum*, Chile, FRIESE, p. 303, t. c.; *A. caroli-ameghinovi*, Patagonia, p. 351, with structure of nest, pp. 354–356, BRETHERS, An. Mus. Buenos Aires (3) ii : n. spp.
- Anthodiocetes* n. g. *Dasygastrina*, *A. megachiloides*, p. 435, *psenynthioides*, p. 436, n. spp., Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Anthoglossa cygni*, Swan River, COCKERELL, p. 203, Ann. Nat. Hist. xiv, n. sp.
- Anthophora chilensis* to *Ancyla*, ALFKEN, p. 141, and p. 180, Revist. Chilena viii.
- A. stanfordiana*, California, COCKERELL, p. 32, Ent. News Philad. xv; *A. paranensis*, p. 398, *saltensis*, p. 399, La Plata, HOLMBERG, An. Mus. Buenos Aires (3) ii; *A. hirperx*, S. America, VACHAL, p. 16, Rev. Ent. franc. xxiii : n. spp.
- Apis*, genus divided, cf. *Megapis*, *Micrapis*, species list, ASHMEAD, pp. 120–123, P. ent. Soc. Washington, vi; *A. mellifera* L. 1758=(*mellifica* L. 1761), BENTON, P. ent. Soc. Washington vi; *A. mellifica*, nesting at large, BOUVIER, p. 187, Bull. Soc. ent. France 1904; *A. dorsata*, *indica* etc., nesting-habits, wax, HOOPER, Agric. Ledger 1904, No. 7.
- Apista* Sm., characters, COCKERELL, p. 330, Canad. Ent. xxxvi.
- Ashmeadiella schwarzi*, p. 98, *coquilletti*, *rufipes*, p. 99, *curriei*, *gillettei*, p. 100, N. America, TITUS, P. ent. Soc. Washington vi, n. spp.
- Augochlora pomona*, p. 456, *egeria*, *terpsichore*, p. 458, *euphrosyne*, p. 459, *polyhymnia*, p. 460, *diana*, p. 461, *epipyrgitis*, p. 462, *aglaia*, p. 463, S. America, HOLMBERG, An. Mus. Buenos Aires (3) ii, n. spp.
- Bombus* of Moravia, SLAVIČEK (in Moravian), Vestnik. Klub. Prostějove iv, pp. 83–106; *B.*, habits of Arctic, FRIESE, Allg. Zeitschr. Ent. ix,

- pp. 409-414; *B. terrestris*, early excavation by ♀, L. SCHUSTER, p. 98, Zool. Garten xlv; *B.*, varieties, varr. n., FRIESE & WAGNER, Zool. Jahrb. Suppl. vii, pp. 551-570, pls. xxix, xxx; *B. robustus* varr. n., *B. thoracicus* var. n. *fuliginosus*, FRIESE, p. 188, Zeitschr. Hym. Dipt. iv.
- B. baeri*, *tucumanus*, Tucuman, VACHAL, p. 10, Rev. Ent. franc. xi, **n. spp.**
- Camptoporum rufiventre*, ♀ = (*schewyrewi* Mer.), NURSE, p. 575, J. Bombay Soc. xv.
- Caupolicana lugubris* = (*mystica* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *C. pubescens* = (*herbsti* Fr.), ALFKEN, p. 141, Revist. chilena viii; *C. mystica* var. *baeriana*, VACHAL, p. 23, Rev. Ent. franc. xxiii.
- C. herbsti*, Chile, FRIESE, p. 180, Zeitschr. Hym. Dipt. iv; *C. rufipes*, *albi-ventris*, p. 17, *nigriventris*, p. 18, Chile, FRIESE, t. c. : **n. spp.**
- Centris*, nesting habits, SCHROTTKY, pp. 347, 348, Allg. Zeitschr. Ent.; *C. chilensis* = (*smithi* Friese), ALFKEN, p. 141, Revist. chilena viii; *C. dorsata* = (*ehrharti* Schr. = *pocograndensis* Schr.), *C. obsoleta* = (*furcata* var. *friesei* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *C. furcata* and allies, table, DUCKE, pp. 209-210, Zeitschr. Hym. Dipt. iv; *C. bicolorella* n. n. for *smithi* Friese nec CRESS., COCKERELL, p. 235, Entomologist 1904; *C. metatarsalis* ♀, p. 90, *cælebs* ♀, p. 92, FRIESE, Ann. Mus. Hungar. ii.
- C. autrani*, S. America, VACHAL, p. 16, Rev. Ent. franc. xxiii; *C. (Epi-charis) minima*, p. 90, Brazil, *labiata*, Costa Rica, *mixta*, Chile, p. 91, FRIESE, Ann. Mus. Hungar. ii; *C. superba*, p. 212, *singularis*, p. 213, Obidos, DUCKE, Zeitschr. Hym. Dipt. iv; *C. mixta*, Chile, FRIESE, p. 187, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Ceratina ino*, p. 575, *egeria*, *coriuna*, p. 576, Quetta, NURSE, J. Bombay Soc. xv; *C. philippinensis*, Manilla, ASHMEAD, p. 2, J. N. York Ent. Soc. xii : **n. spp.**
- Chacoana* n. g. *Aylocoparia*, p. 432, *C. melanoxantha*, n. sp., Argentina, p. 433, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Chalepogenus* n. g. p. 416, *C. incertus* n. sp., Argentina, p. 417, HOLMBERG, t. c.
- Chalicodoma combusta* ♂ = (*Megachile cælocera*), COCKERELL, p. 205, Ann. Nat. Hist. xiv.
- Chelostoma neomexicanum*, New Mexico, COCKERELL, p. 13, Canad. Ent. xxxvi, **n. sp.**
- Chilicola? orientalis*, Tucuman, VACHAL, p. 24, Rev. Ent. franc. xxiii, **n. sp.**
- Cladocerapis* n. g. type *Lamprocolletes cladocerus* Sm., COCKERELL, p. 292, Ent. News Philad. xv.
- Cælioxys* of Africa, characters, pp. 1-7, FRIESE, Arkiv Zool. ii, No. 6; *C. ribis* var. n. *kincaidi*, COCKERELL, p. 33, Ann. Nat. Hist. xiii.
- C. erythropus*, p. 7, *junodi*, p. 8, *difformis*, *cafra*, p. 9, *convergens*, *simplex*, p. 10, *cæruleipennis*, *luteipes*, *incarinata*, p. 11, *planidens*, *nasuta*, p. 12, *setosa*, *furcata*, p. 13, *glabra*, *auriceps*, p. 14, *africana*, *sexspinosa*, p. 15; Africa, FRIESE, Ark. Zool. ii, No. 6; *C. perseus*, India, NURSE, p. 577, J. Bombay Soc. xv; *C. cariniscutis*, *khassiana*, Khasia hills, CAMERON, p. 213, Ann. Nat. Hist. xiii; *C. manila*, Philippines, ASHMEAD, p. 281, Canad. Ent. xxxvi; *C. weinlandi*, New Guinea, SCHULZ, p. 235, Berlin. ent. Zeitschr. xlix; *C. strigata*, *miranda*, S. America, VACHAL, p. 15, Rev. Ent. franc. xxiii; *C. cerasiopleura*, p. 442, *lynchii*, p. 445, *lativalva*, p. 446, *C. ameghinoi*, p. 448, *tucumana*, p. 449, *mendozae*, *insolita*, p. 450, *chacoensis*, p. 451, *vituperabilis*, p. 453, *quærens*, p. 454, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Colletes*, notes on some little-known, COCKERELL, p. 276, Ent. News Philad. xv; MORICE figures and describes the male genitalia of thirty-five species of *Colletes*, and tabulates the species, Tr. ent. Soc. London 1904,

- pp. 25-63, pls. vi-ix; *C. occidentalis* Hal. = *chilensis* Spin., *cyaniventris* Hal. = *cyaniventris* Spin., ALFKEN, p. 141, *Revist. chilena* viii.
- C. suecica*, Sweden, AURIVILLIUS, p. 214, *Ent. Tidskr.* xxiv (omitted last year); *C. moricei*, Tenerife, SAUNDERS, p. 229, *Ent. Mag.* xl; *C. eous*, Transcaucasus, p. 43, *cecrops*, Attica, p. 44, *perezi*, Cairo, p. 45, *eatonii*, Algeria, p. 49, *phalericus*, S. Europe, p. 53, *pumilus*, Algeria, p. 55, MORICE, *Tr. ent. Soc. London* 1904; *C. similis*, N. America, ROBERTSON, p. 276, *Canad. Ent.* xxxvi; *C. robustus*, Nebraska, SWENK, p. 251, *Ent. News Philad.* xv; *C. fulgulus*, Oregon etc., SWENK, p. 95, *Canad. Ent.* xxxvi; *C. wilmuttæ*, New Mexico, COCKERELL, p. 14, *Canad. Ent.* xxxvi; *C. niger*, p. 76, *bruneri*, p. 77, Costa Rica, SWENK, *Canad. Ent.* xxxvi; *C. catulus*, *virgatus*, S. America, VACHAL, p. 26, *Rev. Ent. franc.* xxiii; *C. cyaneus*, Argentina, HOLMBERG, p. 468, *An. Mus. Buenos Aires* (3) ii : **n. spp.**
- Conohalictoides* **n. g.** *C. lovelli* **n. sp.**, Delaware, VIERECK, p. 245, *Ent. News Philad.* xv.
- Crocisa jaegerskoeldi*, Khartoum, MORICE, p. 9, *Jägerskiöld exp. No.* 14, **n. sp.** (but see *Zool. Rec.* 1903).
- Cryptohalictoides* **n. g.** *C. spiniferus* **n. sp.**, Nebraska, VIERECK, p. 261, *Ent. News Philad.* xv.
- Otenopis lutea*, sexes, NURSE, p. 570, *J. Bombay Soc.* xv.
- Otenoplectra vagans*, Philippines, COCKERELL, p. 204, *Ann. Nat. Hist.* xiv, **n. sp.**
- Dialictus*, composition, COCKERELL, p. 235, *Entomologist* 1904.
- Dianthidium*, fresh components, COCKERELL, pp. 206, 207, *Ann. Nat. Hist.* xiv.
- Dioxys atlantica*, Tenerife, SAUNDERS, p. 232, *Ent. Mag.* xl, **n. sp.**
- Diphaglossa spinolæ*, Bolivia, CRAWFORD, p. 50, *Canad. Ent.* xxxvi; *D. ? gaullei*, Tucuman, VACHAL, p. 23, *Rev. Ent. franc.* xxiii : **n. spp.**
- Egagrista* **n. n.** for *Apista* Sm., COCKERELL, p. 357, *Canad. Ent.* xxxvi.
- Energoponus* **n. g.** *Anthophoritæ*, p. 406, *E. ameghoini*, p. 407, *strenuus*, p. 408, **n. spp.**, Argentina, HOLMBERG, *An. Mus. Buenos Aires* (3) ii.
- Epeolus remigatus martini* a distinct species, COCKERELL, p. 24, t. c.
- E. crucis*, p. 39, *beulahensis*, p. 40, New Mexico, *olympiellus*, Washington State, p. 41, COCKERELL, *Ann. Nat. Hist.* xiii; *E. ? baeri*, Tucuman, VACHAL, p. 23, *Rev. Ent. franc.* xxiii : **n. spp.**
- Epiclopus gayi* = (*Melecta chilensis*), COCKERELL, p. 207, *Ann. Nat. Hist.* xiv.
- Epimonspractor* **n. g.** p. 426, *E. graciosus*, p. 427, *bomanii*, p. 428, **n. spp.** Argentina, HOLMBERG, *An. Mus. Buenos Aires* (3) ii.
- Epinomia triangulifera*, natural history, relations with other insects, PIERCE, pp. 181-189, *Stud. Univ. Nebraska* iv.
- Eriades clypeatus*, p. 297, *bicornutus*, *eximius*, p. 298, S. E. Africa, FRIESE, *Zeitschr. Hym. Dipt.* iv; *E. tenuis*, India, NURSE, p. 577, *J. Bombay Soc.* xv : **n. spp.**
- Euaspis* and *Parevaspis*, *E. smithi* **n. n.** for *abdominalis* Sm., FRIESE, pp. 137, 138, *Allg. Zeitschr. Ent.* ix.
- Eucera flavitarsis* = (*Tetralonia placens* Schlett.), ALFKEN, p. 141, *Revist. chilena* viii.
- E. medusa*, p. 578, *diana*, *E. (Macrocera) phryne*, p. 579, *pomona*, p. 580, *cassandra*, p. 581, India, NURSE, *J. Bombay Soc.* xv, **n. spp.**
- Euglossa cordata* var. **n. townsendi**, COCKERELL, p. 24, *Ann. Nat. Hist.* xiv; *E. superba* Hoffm. (as *Plusia*) = (*smaragdina* Perty); FRIESE, p. 99, *Zeitschr. Hym. Dipt.* iv.
- Exomalopsis verbesinæ*, New Mexico, COCKERELL, p. 21, *Ann. Nat. Hist.* xiv, **n. sp.**
- Greeleyella* **n. g.** *Panurginæ*, p. 235, *G. beardsleyi* **n. sp.**, Colorado, p. 236, COCKERELL, *Entomologist* 1904.

- Habropoda fulvipes*, Khasia hills, CAMERON, p. 211, Ann. Nat. Hist. xiii, n. sp.
- Halictus*, synonymical notes on european, ALFKEN, p. 1, Zeitschr. Hym. Dipt. iv; *H. frey-gessneri* n. n. for *subfasciatus* Nyl., id. p. 3; *H. orpheus* n. n. for *testaceus* Nurse, NURSE, p. 26, J. Bombay Soc. xvi; *H.*, Australian and New Zealand species, COCKERELL, p. 211, Ann. Nat. Hist. xiv; *H. gayi*, *posticus* and *gayatinus* Spin. to *Ceratina*, ALFKEN, p. 141, Revist. chilena viii.
- H.*, VACHAL (1426) describes by tables numerous species that are probably new, though this is not stated, many of the names occur twice, there are upwards of 100, all from South and Central America, ? n. spp.
- H. dubitabilis*, p. 613, *hollandi*, p. 614, *hammi*, p. 615, Majorca, SAUNDERS, Tr. ent. Soc. London 1904; *H. dubius*, Tenerife, SAUNDERS, p. 231, Ent. Mag. xl; *H. carinifrons*, N. India, CAMERON, p. 303, Ann. Nat. Hist. xiii; *H. himalayensis*, India, CAMERON, p. 210, Entomologist 1904; *H. philippinensis*, Manila, ASHMEAD, p. 128, P. U. S. Mus. xxviii; *H. manila*, Philippines, ASHMEAD, p. 281, Canad. Ent. xxxvi; *H. peraustralis*, S. Australia, COCKERELL, p. 211, Ann. Nat. Hist. xiv; *H. vierecki*, p. 97, *marinus*, p. 99, New Jersey, CRAWFORD, Ent. News Philad. xv; *H. denticulus*, *procerus*, p. 469, *nearcticus*, p. 470, N. America, *ochromerus*, Brazil, *citricornis*, Chili, *tricheus*, p. 471, *transversus*, *capitulatus*, p. 472, Mexico, *citerior*, hab. ?, *aequatus*, *linctus*, *crocoturus*, p. 473, *trichienos*, *jubatus*, *circinatus*, p. 474, *pharus*, *costalis*, *spinalis*, Mexico, *egregius*, Brit. Colombia, *colatus*, Colorado, p. 476, *pallicornis*, Mexico, *crassus*, *granosus*, p. 477, *occultus*, N. America, *respersus*, *laneus*, Mexico, p. 478, *adelipus*, *pullilabris*, p. 479, *arctus*, *nigridens*, *nigricollis*, p. 480, *gelidus*, *gularis*, N. America, *aratus*, Mexico, *diatretus*, Colorado, p. 481, *bivarus*, *curtulus*, p. 482, Mexico, *fartus*, Washington, *sertus*, p. 483, *coactilis*, *ectypus*, *biseptus*, p. 484, *terginus*, *sudus*, Mexico, *beskei*, *centranellus*, S. America, p. 485, *cubitalis*, Mexico, *lanifer*, hab. ?, *pisinnus*, Chili, p. 486, VACHAL, Bull. Soc. Corree xxvi; *H. clematisellus*, New Mexico, COCKERELL, p. 13, Canad. Ent. xxxvi; *H. riveti*, *antarius*, p. 313, *H. (Augochl.) notares*, p. 314, Ecuador, VACHAL, Bull. Mus. Paris 1904; *H. baeri*, *alticola*, Tucuman, VACHAL, p. 25, Rev. Ent. franc. xxiii : n. spp.
- Heriadini* to be used instead of *Trypetini*, TITUS, p. 23, J. N. York Ent. Soc. xii.
- Heriades bruneri*, Costa Rica, TITUS, p. 24, t. c. n. sp.
- Heteranthidium* n. g. type *Anthidium dorsale* Lep., COCKERELL, p. 292, Ent. News Philad. xv.
- Hopliphora velutina*=(*Oxyntedis beroni* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Hoplitis sambuci*, Washington, TITUS, p. 101, P. ent. Soc. Washington vi, n. sp.
- Hoplonomia* n. g. *Andrenida*, *H. quadrifasciata* n. sp., Philippines, ASHMEAD, p. 4, J. N. York Ent. Soc. xii.
- Hypanthidium* n. g. type *Anthidium flavomarginatum* Sm., COCKERELL, p. 292, Ent. News Philad. xv.
- Lanthanomelissa* n. g. p. 418, *L. discrepans* n. sp., Argentina, p. 418, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Leioproctus boltoni*, p. 203, *confusus*, p. 204, New Zealand, COCKERELL, Ann. Nat. Hist. xiv, n. spp.
- Leptergatis* n. g. p. 422, *L. halictoides*, *mesopotamica*, p. 424, *romeroi*, p. 425, Argentina, n. spp., HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Leptometria* n. g. p. 409, *L. pereyrae*, p. 410, *baraderensis*, p. 411, *andina*, p. 412, n. spp., Argentina, HOLMBERG, t. c.
- Macrocera baeri*, p. 19, *linearis*, *brethesi*, *buccosa*, p. 20, *curtata*, *discobola*, p. 21, *arrhenica*, *dama*, p. 22, S. America, VACHAL, Rev. Ent. franc. xxiii, n. spp.

- Macrotera secunda*, Mexico, COCKERELL, p. 205, Ann. Nat. Hist. xiv, **n. sp.**
Megachile latimanus grindeliarum subsp. n., COCKERELL, p. 33, Ent. News Philad. xv; *M. lachesis* ♂, SCHULZ, p. 234, Berlin. ent. Zeitschr. xlix; *M. sauleyi* Guér.=*chilensis* Spin., ALFKEN, p. 141, Revist. chilena viii; *M. sparganotes* to *Lithurgus*, FRIESE, p. 99, Zeitschr. Hym. Dipt. iv; *M. dubia* Sich. to *Lithurgus*, FRIESE, p. 304, t. c.; *M.*, analysis of a nest, LUDWIG, p. 225, Allg. Zeitschr. Ent. ix.
- M. damaraensis*, p. 330, *atripes*, p. 331, *flavescens*, *malangensis*, p. 332, *marshalli*, *triangulifera*, p. 333, *quadrispinosa*, *M. (Chalicodoma) cariniventris*, p. 334, *fulvohirta*, *M. latitarsis*, p. 335, *cornigera*, *niveofasciata*, p. 336, Africa, FRIESE, Zeitschr. Hym. Dipt. iv; *M. volkmanni*, p. 299, *kerensis*, *cyanescens*, p. 301, *junodi*, *impunctata*, p. 302, Africa, FRIESE, t. c.; *M. khasiana*, India, CAMERON, p. 216, Ann. Nat. Hist. xiii; *M. taprobanæ*, Ceylon, CAMERON, p. 15, Zeitschr. Hym. Dipt. iv; *M. aberrans*, Nicobars, Java etc., FRIESE, p. 329, Zeitschr. Hym. Dipt. iv; *M. robbii*, Manila, ASHMEAD, p. 128, P. U. S. Mus. xxviii; *M. strophostylis*, N. America, ROBERTSON, p. 277, Canad. Ent. xxxvi; *M. emoryi*, New Mexico, COCKERELL, p. 7, Entomologist 1904; *M. rufohirta*, Chile, p. 185, *garleppi*, p. 186, *ecuadoria*, p. 187, Ecuador, *aricensis*, Chile, p. 188, FRIESE, Zeitschr. Hym. Dipt. iv; *M. arctos*, Tucuman, *patagonica*, Santa Cruz, p. 11, *vetula*, *rufiplantis*, *baeri*, p. 12, *lævinasis*, *eburnipes*, *schrottkyi*, p. 13, *nubila*, p. 14, Tucuman, VACHAL, Rev. Ent. franc. xxiii : **n. spp.**
- Megacilissa tarsata*=(*metatarsalis* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *M. eximia* to *Ptiloglossa*, FRIESE, p. 19, t. c.
- M. matutina*, Paraguay, SCHROTCKY, p. 346, Allg. Zeitschr. Ent. ix, **n. sp.**
Megapis n. g. for *Apis dorsata*, ASHMEAD, p. 120, P. ent. Soc. Washington vi.
- Melanapis rufifrons*, Quetta, NURSE, p. 567, J. Bombay Soc. xv, **n. sp.**
Melecta interrupta varr. n. *fallugia*, *rociadensis*, COCKERELL, p. 23, Ann. Nat. Hist. xiv; *M. armata*, habits relations with *Anthophora*, SEMICHON, Bull. Soc. ent. France 1905, p. 188.
- Melipona baeri*, Tucuman, VACHAL, p. 9, Rev. Ent. franc. xxiii, **n. sp.**
Melissa diabolica=(*Cyphomelissa pernigra* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Melissodes californica* to *Synhalonia*, COCKERELL, p. 235, Entomologist 1904.
M. machaerantheræ, New Mexico, COCKERELL, p. 21, Ann. Nat. Hist. xiv, **n. sp.**
- Melissoptila bonaërensis*, Buenos Ayres, HOLMBERG, p. 384, An. Mus. Buenos Aires (3) ii, **n. sp.**
- Micrapis n. g.* for *Apis florea*, ASHMEAD, p. 122, P. ent. Soc. Washington vi.
- Monumetha argentifrons*, ♂ characters, TITUS, p. 26, J. N. York Ent. Soc. xii.
- Morgania*; cf. *Pasites* and *Omachthes*.
- Nectarodicta n. g.* p. 420, *N. oliveiræ n. sp.*, Argentina, p. 421, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Neohalictoides n. g.* type *H. maurus* Cr., VIERECK, p. 261, Ent. News Philad. xv.
- Nomada fulvipes* Br.=(*imperialis* Schm.), *N. conjungens*=(*dallatorreana* Schm.), ALFKEN, p. 1, Zeitschr. Hym. Dipt. iv; *N. vegana*, a valid species, var. n. *nitescens*, p. 76, *coloradensis* ♂, *vicinalis* var. n. *infrarubens*, p. 84, COCKERELL, Bull. Colorado exp. Stat. 94; *N. mutica*=(*olympica* Schm.), *N. sexfasciata* var.=(*fulvipes* Br.=*imperialis* Schm.), FRIESE, p. 99, Zeitschr. Hym. Dipt. iv.
- N. detecta*, p. 571, *annexa*, p. 572, India, NURSE, J. Bombay Soc. xv; *N. frieseana*, p. 28, *semiscita*, p. 29, Colorado, COCKERELL, Ann. Nat. Hist. xiv; *N. (Gnathias) rubrella*, p. 75, *N. (Micronomada) lamarensis*, p. 76, *uhleri*, p. 77, *N. (Xanthidium) rhodoxantha*, p. 78, *crawfordi*,

- collinsiana*, p. 79, *parvicincta*, p. 80, with var. *rufula*, *N. gillettei*, *agnia*, p. 81, *pallidella*, p. 82, *coloradella*, *luteopicta*, p. 83, *alpha*, p. 84, Colorado, COCKERELL, Bull. Colorado exp. Stat. 94 : n. spp.
- Nomia rubella* ♀, *scutellaris*, *maculata* and *nigripes*, subspp. n., FRIESE, p. 296, Zeitschr. Hym. Dipt. iv; *N. tegulata* ♂, MORICE, p. 6, Jägerskiöld exp. No. 14.
- N. rubra*, Transvaal, FRIESE, 297, Zeitschr. Hym. Dipt. iv; *N. bahadur*, p. 568, *kangra*, p. 569, India, NURSE, J. Bombay Soc. xv; *N. pilosella*, p. 211, *rotkneyi*, p. 214, *interrupta*, *tuberculata*, p. 215, N. India, CAMERON, Ann. Nat. Hist. xiii : n. spp.
- Omachthes carnifex* and *histrio*, to *Morgania*, COCKERELL, p. 208, Ann. Nat. Hist. xiv.
- Osiris fasciata* = (*Euthyglossa fasciata* Rad.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Osmia*, N. American components, TITUS, p. 26, J. N. York Ent. Soc. xii; *O. parvula*, *leucomelana*, and their parasite *Stelis ornatula*, HÖPPNER, pp. 129-134, Allg. Zeitschr. Ent. ix; *O. bicornis*, nests, KOPF, pp. 346-348, Jahresh. Ver. Württemb. lx.
- O. sponsa*, *balucha*, p. 573, *sita*, p. 574, Quetta, NURSE, J. Bombay Soc. xv, n. spp.
- Oxæa festiva*, ♂, FRIESE, p. 18, Zeitschr. Hym. Dipt. iv.
- Oxystoglossa decorata*, characters, COCKERELL, p. 208, Ann. Nat. Hist. xiv.
- Parandrena chalybioides*, Oregon, VIERECK, p. 229, Canad. Ent. xxxvi, n. sp.
- Paranomia stantoni*, Philippines, ASHMEAD, p. 4, J. N. York Ent. Soc. xii, n. sp.
- Parasphécodes*, table, COCKERELL, p. 209, Ann. Nat. Hist. xiv.
- P. melbournensis*, *frenchi*, Australia, COCKERELL, p. 210, t. c. n. spp.
- Parevaspis basalis* and *abdominalis*, COCKERELL, p. 207, t. c.
- Pasites dichrous* to *Morgania*, COCKERELL, p. 207, t. c.
- Perdita gerhardi*, p. 21, *monardæ*, p. 22, New Jersey, VIERECK, Ent. News Philad. xv, n. spp.
- Podalirius orotava*, Tenerife, SAUNDERS, p. 234, Ent. Mag. xl; *P. vedettus*, p. 582, *connexus*, p. 583, *sergius*, p. 584, India, NURSE, J. Bombay Soc. xv : n. spp.
- Prochelostoma philadelphia*, characters, TITUS, p. 24, J. N. York Ent. Soc. xii.
- Prospis*, synonymy of European, ALFKEN, pp. 1, 2, Zeitschr. Hym. Dipt. iv; *P. variegata* varr. n. *integra*, *obtusata*, *maculata*, ALFKEN, pp. 322, 323, t. c.; *P.* and its parasite *Gasteruption*, HÖPPNER, pp. 97-103, Allg. Zeitschr. Ent. ix.
- P. dubitata*, S. Europe, p. 323, *persica*, Araxes, p. 324, *friesei*, Fiume, p. 325, ALFKEN, Zeitschr. Hym. Dipt. iv; *P. basimaculata*, Darjiling, CAMERON, p. 209, Entomologist 1904; *P. philippinensis*, Manila, ASHMEAD, p. 5, J. N. York Ent. Soc. xii; *P. sayi*, N. America, ROBERTSON, p. 273, Canad. Ent. xxxvi : n. spp.
- Proteraner leptanthi*, p. 232, *rhois*, p. 233, Colorado, COCKERELL, Entomologist 1904, n. spp.
- Proteriades* n. g. for *Heriades semirubra* Ckll., TITUS, p. 25, J. N. York Ent. Soc. xii.
- Pszenythia unizonata*, Argentina, HOLMBERG, p. 455, An. Mus. Buenos Aires (3) ii, n. sp.
- Pseudopanergus* = (*Protandrenopsis* Crawf.), COCKERELL, p. 26, Ann. Nat. Hist. xiv.
- P. pectidellus*, New Mexico, id., l. c. n. sp.
- Pterandrena oniscicolor*, *albuginosa*, *pallidiscopa*, *nudiscopa*, *pallidifovea*, *complexa*, *erigenoides*, *crypta*, p. 228, *acrypta*, *nudimediocornis*, p. 229, Oregon etc., VIERECK, Canad. Ent. xxxvi, n. spp.
- Ptiloglossa aculeata*, Brazil, p. 19, *eburnea*, Peru, p. 20, FRIESE, Zeitschr. Hym. Dipt. iv, n. spp.

- Ptilothrix nudipes* Burm. (as *Meliphila*)=(*similis* Fr.), FRIESE, p. 100, t. c.
Rhathymus and *Eurytis*, characters, COCKERELL, p. 208, Ann. Nat. Hist. xiv; *R. armatus*=(*Odyneropsis holosericea* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
Robertsonella n. g. *Osmiinae*, p. 22, *R. gleasoni* n. sp., Illinois, p. 23, TITUS, J. N. York Ent. Soc. xii.
Saropoda alpha, Australia, COCKERELL, p. 204, Ann. Nat. Hist. xiv, n. sp.
Scirtetica n. g. *Euceritæ*, p. 389, *S. antarctica* n. sp., Patagonia, p. 391, HOLMBERG, An. Mus. Buenos Aires (3) ii.
Serapis rufipes, Cape Colony, FRIESE, p. 106, Zeitschr. Hym. Dipt. iv, n. sp.
Serapista n. n. for *Serapis* Sm., COCKERELL, p. 357, Canad. Ent. xxxvi.
Sphecodes (*Drepanium*) *olympicus*, p. 230, *S. (Machaeris) washingtoni*, p. 231, *S. (S.) hesperellus, arvensiformis*, p. 232, Oregon etc., COCKERELL, Canad. Ent. xxxvi; *S. viganus, pecosensis*, New Mexico, COCKERELL, p. 5, Entomologist 1905; *S. arroyanus*, New Mexico, COCKERELL, p. 231, t. c.; *S. equator*, Ecuador, VACHAL, p. 314, Bull. Mus. Paris 1904; *S. lunaris*, Tucuman, VACHAL, p. 26, Rev. Ent. franc. xxiii : n. spp.
Stelis ornatula, cf. *Osmia*.
Svastra fulgurans, Argentina, HOLMBERG, p. 388, An. Mus. Buenos Aires (3) ii, n. sp.
Synhalonia frater aragalli subsp. n., *S. crenulaticollis* var. n. *lippia*, COCKERELL, p. 25, Ann. Nat. Hist. xiv.
Tapinotaspis n. g. p. 413, *T. chacabucensis, sabularum*, p. 415, n. spp., Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii.
Teleutemnesta n. g. p. 400, *T. fructifera*, p. 402, *scalaris, relata*, p. 403, *distincta*, p. 404, *separata*, p. 405, La Plata, n. spp., HOLMBERG, t. c.
Tetralonia melanura=(*Anthoph. grisea* Schl. and *Megach. gasperini* Schl., also *T. atrifrons* Sm.), FRIESE, p. 99, Zeitschr. Hym. Dipt. iv; *T. analis*=(*Macroglossa oribazi* Rad.), FRIESE, p. 100, t. c.
Tetrapedia mexicana Rad. as (*Epeicharis*)=(*fiorentinia* D. T.=*saussurei* Fr.), FRIESE, p. 100, t. c.
T. tucumana, gaullei, Tucuman, VACHAL, p. 22, Rev. Ent. franc. xxiii, n. spp.
Thygater chrysophora, Argentina, HOLMBERG, p. 386, An. Mus. Buenos Aires (3) ii, n. sp.
Thyreothrenma n. g. *Euceritæ*, p. 391, *T. rhopalocera*, p. 393, *desiderata*, p. 395, *abscondita*, p. 396, La Plata, HOLMBERG, t. c. n. spp.
Trachandrena amphibola, p. 159, *indotata, ochroleptura, crassihirta, perdensa, hadra, limarea*, p. 160, *cleodora, fuscicauda, auricauda, pernuda*, p. 161, Oregon etc., VIERECK, Canad. Ent. xxxvi, n. spp.
Trachusa serratulæ, habits, ADLERZ, pp. 121-129, Ent. Tidskr. xxv.
Trichocera n. g. type *Tetralonia mirabilis* Sm., COCKERELL, p. 292, Ent. News Philad. xv.
Triepeolus helianthi var. n. *arizonensis, cressoni* var. n. *frasere*, COCKERELL, p. 39, Ann. Nat. Hist. xiii.
T. nautilana, Mexico, *pimarum, mesille*, p. 36, *isocoma*, p. 38, New Mexico, COCKERELL, t. c. n. spp.
Trigona heideri, occidentalis, SCHULZ, p. 823, SB. Ak. Munchen 1904.
T. catamarcensis, p. 378, *remota*, p. 379, HOLMBERG, An. Mus. Buenos Aires (3) ii, n. spp.
Xylocopa collaris var. n. *binghami*, COCKERELL, p. 30, Ann. Nat. Hist. xiv; *X. violacea*, piercing flowers for nectar, COBELLI, p. 11, Allg. Zeitschr. Ent. ix; *X.* and flowers in Paraguay, SCHROTTKY, p. 346, Allg. Zeitschr. Ent. ix.
X. nautilana, Mexico, COCKERELL, p. 30, Ann. Nat. Hist. xiv, n. sp.
Zucesta, referred to *Panurgidæ*, characters, TITUS, p. 26, J. N. York Ent. Soc. xii.

VESPIDÆ, EUMENIDÆ, RHOPALOSOMIDÆ, MASARIDÆ.

[Cf. ADLERZ (14), BRÈTHES (176, 178, 180, 181), DU BUYSSON (218, 219), CAMERON (222, 223, 228-231, 234, 235), DALLA TORRE (342), DUCKE (411, 414), DUSMET (417), ENDERLEIN (457), FRIESE (541), VON IHERING (731), MORICE (959), NURSE (986), PECHLAUER (1014), PORTER (1099), SAUNDERS (1215), SAUSSURE (1218), SCHULTHESS-RECHBERG (1246), SCHULZ (1253, 1255), TULLGREN (1404).]

The genera and classification revised and the species listed, DALLA TORRE, Gen. Ins. *Vespidæ*, 108 pp., 6 plates.

Moravian wasps, table in Moravian, SLAVIČEK, pp. 18-22, Vestník. Klub. Prostějov i.

Supplement to Spanish *Eumenidæ*, with notes on critical species, DUSMET, pp. 126-137, Bol. Soc. espan. iv.

Vespidæ of S. America and Argentina, with 1 n. sp., BRÈTHES (176).

Social wasps of S. America, monograph, plate of nests, DUCKE, Bol. Mus. Geldi iv, pp. 317-374.

Eumenidæ of La Plata monographed, BRÈTHES, An. Mus. Buenos Aires (3) ii, pp. 231-320.

Annotated list of Chilian *Vespidæ*, PORTER, Revist. chilena viii, pp. 193-197.

Habits of *Polistes biglumis* in Sweden, ADLERZ, pp. 97-106, Ent. Tidskr. xxv.

Alastor merceti, Alicante, DUSMET, p. 126, Bol. Soc. espan. iv; *A. anomalus*, p. 303, *schrottkyi*, p. 305, *argentinus*, p. 306, *persimilis*, p. 308, *elongatus*, p. 309, *arcuatus*, p. 310, S. America, BRÈTHES, An. Mus. Buenos Aires (3) ii : n. spp.

Alpha n. gr. of *Paragia*, DALLA TORRE, p. 4, *Vespidæ*.

Belenogaster petiolatus = (*brachycerus* Kohl), p. 461, *junceus*, nests, p. 453, TULLGREN, Arkiv Zool. i.

B. occidentalis, Cameroons, TULLGREN, p. 455, pl. xxv, fig. 14, t. c. n. sp.

Beta n. gr. of *Paragia*, DALLA TORRE, p. 4, *Vespidæ*.

Chartergus laticinctus, p. 330, *rufiventris*, p. 335, *pusillus*, p. 336, *nitidus*, p. 338, S. America, DUCKE, Bol. Mus. Geldi iv, n. spp.

Ctenochilus argentinus, La Plata, BRÈTHES, p. 232, An. Mus. Buenos Aires (3) ii.

Deuteroipoica n. n. for *Apoica* pt., DALLA TORRE, p. 79, *Vespidæ*.

Deuterodiscælius n. gr. of *Discælius*, DALLA TORRE, p. 18, *Vespidæ*.

Discælius cuyanus, p. 234, *paranensis*, p. 236, *assimilis*, p. 238, *ater*, p. 239, *auritulus*, p. 241, *fluminensis*, p. 242, *nitidus*, p. 245, *praxii*, p. 246, *andinus*, p. 248, La Plata, BRÈTHES, An. Mus. Buenos Aires (3) ii, n. spp.

Eualastor n. gr. for part of *Alastor*, DALLA TORRE, p. 60, *Vespidæ*.

Euancistrocerus n. n. for *Ancistrocerus* s. str. Sauss., DALLA TORRE, p. 36, *Vespidæ*.

Euceramius n. gr. of *Cerannius*, DALLA TORRE, p. 5, *Vespidæ*.

Eudiscælius n. g. *E. metallicus* n. sp., Tenimber-Larat, FRIESE, Zeitschr. Hym. Dipt. iv.

Euepipona n. n. for *Epiponus* s. str. Sauss., DALLA TORRE, p. 39, *Vespidæ*.

Eumenes latreillei, *petiolaris* and *butonensis* subspp. n., SCHULZ, pp. 217, 218, Berlin. ent. Zeitschr. xlix; *E. coarctatus* and *pomiformis*, ZAVATTARI, p. 8, Boll. Mus. Torino xix, No. 482.

E. gracillima, Cameroons, TULLGREN, p. 445, pl. xxiii, fig. 8, Arkiv Zool. i; *E. parvilineata*, Sikkim, CAMERON, p. 12, Zeitschr. Hym. Dipt. iv; *E. montana*, Quetta, NURSE, p. 26, J. Bombay Soc. xvi; *E. micado*, Japan, CAMERON, p. 35, Entomologist 1904; *E. alfkni*, Obidos,

- DUCKE, p. 138, *Zeitschr. Hym. Dipt.* iv; *E. autrani*, p. 252, *arechavalete*, p. 256, La Plata, *magna*, p. 258, Brazil, BRÈTHES, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Eumontezumia* **n. n.** for a division of *Montezumia*, DALLA TORRE, p. 27, Vespidae.
- Euodynerus* **n. n.** for *Odynerus* pt. Sauss., DALLA TORRE, p. 38, Vespidae.
- Eupolistes* **n. gr.** for pt. of *Polistes*, DALLA TORRE, p. 68, Vespidae.
- Eupolybia* **n. subg.** for *Polybia* pt., DALLA TORRE, p. 76, Vespidae.
- Eurhynchium* **n. n.** for *Rygiichium* div. I Sauss., DALLA TORRE, p. 33, Vespidae.
- Eusynagris* **n. n.** for *Synagris*, div. I Sauss., DALLA TORRE, p. 30, Vespidae.
- Euzethus* **n. gr.** for *Zethus* div. I Sauss., DALLA TORRE, p. 14, Vespidae.
- Hymenosmithia* **n. n.** for *Smithia* Sauss., DALLA TORRE, p. 61, Vespidae.
- Icaria singapurensis*, p. 120, *rufinoda*, p. 121, Singapore, CAMERON, J. Straits Asiat. Soc. xli, **n. spp.**
- Icariastrum* **n. n.** for *Icaria* Sect. I Sauss., DALLA TORRE, p. 72, Vespidae.
- Icariella* **n. n.** for *Icaria* Sect. II Sauss., DALLA TORRE, p. 72, Vespidae.
- Icariota* **n. n.** for *Icaria* Sect. III Sauss., DALLA TORRE, p. 72, Vespidae.
- Juartinia indica*, Deesa, CAMERON, p. 89, *Zeitschr. Hym. Dipt.* iv, **n. sp.**
- Leontiniella* **n. g.** near *Monobia*, *L. argentina* **n. sp.**, Argentina, BRÈTHES, p. 265, An. Mus. Buenos Aires (3) ii.
- Macrovespa* **n. n.** for part of *Vespa*, DALLA TORRE, p. 64, Vespidae.
- Masaris alfkeni*, Damara land, DU BUYSSON, p. 144, Bull. Soc. ent. France 1904, **n. sp.**
- Megacanthopus* **n. g.** near *Polybia*, p. 358, with *M. collaris*, *lecointei*, p. 361, *alfkeni*, *imitator*, p. 362, *punctatus*, p. 363, **n. spp.**, S. America, DUCKE, Bol. Mus. Gældi iv.
- Monobia angulosa* var. **n. cingulata**, BRÈTHES, p. 264, An. Mus. Buenos Aires (3) ii.
- M. atrorubra*, Pará, DUCKE, p. 142, *Zeitschr. Hym. Dipt.* iv, **n. sp.**
- Montezumia saussurei* to *Nortonia*, SCHULTHESS-RECHBERG, p. 270, *Zeitschr. Hym. Dipt.* iv.
- M. bruchii*, Argentina, id. p. 263, t. c.; *M. difficilis*, Pará, DUCKE, p. 141, *Zeitschr. Hym. Dipt.* iv : **n. spp.**
- Nortonia*, table of species, SCHULTHESS-RECHBERG, p. 270, *Zeitschr. Hym. Dipt.* iv.
- N. polybioides*, p. 272, *lugens*, p. 274, Peru, *bifasciata*, p. 275, *steinbachi*, p. 277, Tucuman, SCHULTHESS-RECHBERG, t. c.; *N. sulcata*, Pará, DUCKE, p. 140, *Zeitschr. Hym. Dipt.* iv : **n. spp.**
- Odynerus argentinus*, nesting habits, BRÈTHES, p. 204, pl. i, *Revist. Mus. La Plata* x.
- O. eatoni*, Tenerife, SAUNDERS, p. 203, *Ent. Mag.* xl; *O. (?Ancistrocerus) aberraticus*, White Nile, MORICE, p. 4, Jägerskiöld exp. No. 14 (but see *Zool. Rec.* 1903); *O. falcatus*, Cameroons, TULLGREN, p. 452, pl. xxv, fig. 13, *Arkiv Zool.* i; *O. camicrus*, Darjiling, CAMERON, p. 259, *Entomologist* 1904; *O. rhipheus*, p. 308, *tytides*, p. 309, Darjiling, CAMERON, *Entomologist* 1904; *O. declivus*, p. 273, *acuminatus*, p. 274, *montevidensis*, p. 276, *subtropicalis*, p. 278, *lynchii*, p. 279, *catamarcensis*, p. 283, *arechavalete*, p. 285, *cuyanus*, p. 287, *heptagonalis*, p. 289, *punctatus*, p. 290, *bruchii*, p. 292, *ameghinoi*, p. 300, *schrottkyi*, p. 302, *patagonus*, p. 312, S. Amer., Bolivia, Patagonia, BRÈTHES, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Parachartergus* and *P. bentobuenoi*, IHERING, Bull. Soc. ent. France 1904, p. 84.
- P. wagneri*, Tijuca, DU BUYSSON, p. 145, Bull. Soc. ent. France 1904, **n. sp.**
- Polistella* **n. g.** for *Polistes manillensis*, ASHMEAD, p. 133, P. U. S. Mus. xxviii.

- Polistes tepidus novæ-pomeraniæ* subsp. n., p. 227, *P. marginalis papuanus* subsp. n., p. 231, SCHULZ, Berlin. ent. Zeitschr. xlix; *P. crinitus* = (*annularis* and *pallipes* Schrottky), BRÈTHES, p. 24, An. Mus. Buenos Aires (3) ii.
- P. inornatus*, Cameroons, TULLGREN, p. 456, pl. xxv, fig. 15, Arkiv Zool. i; *P. niger*, Brazil, BRÈTHES, p. 20, An. Mus. Buenos Aires (3) ii; *P. geldii*, p. 368, *biglumoides*, p. 369, *claripennis*, p. 370, *rufiventris*, *occipitalis*, p. 371, S. America, DUCKE, Bol. Mus. Gældi iv: n. spp.
- Polistoides* n. gr. for pt. of *Polistes*, DALLA TORRE, p. 68, Vespidae.
- Polybia furnaria*, p. 85, *ypiranguensis*, p. 86, IHERING, Bull. Soc. ent. France 1904; *P. yurinei* var. n. *bonaërense*, BRÈTHES, p. 28, An. Mus. Buenos Aires (3) ii.
- P. pseudomimetia*, Amazons, SCHULZ, p. 803, SB. Ak. Munchen 1903; *P. huberi*, *holoxantha*, p. 349, *micans*, *rufitarsis*, p. 351, *vulgaris*, p. 352, *lutea*, p. 353, *obidensis*, p. 354, *lignicola*, *cæmentaria*, p. 355, *sculpturata*, p. 356, S. America, DUCKE, Bol. Mus. Gældi iv: n. spp.
- Protapoica* n. n. for *Apoica* pt., DALLA TORRE, p. 79, Vespidae.
- Protodiscælius* n. gr. of *Discælius*, DALLA TORRE, p. 18, Vespidae.
- Rhynchium hæmorrhoidale dohertyi* subsp. n., SCHULZ, p. 223, Berlin. ent. Zeitschr. xlix; *R. sirdari*, Khartoum, MORICE, p. 4, Jägerskiöld exp. No. 14, n. sp. (but see Zool. Rec. 1903).
- Synagris trispinosa*, p. 447, pl. xxiv, fig. 9, *rufopicta*, fig. 10, p. 448, *uncata*, fig. 11, p. 449, *4-punctata*, fig. 12, p. 450, Cameroons, TULLGREN, Arkiv Zool. i, n. spp.
- Tetrarthra* n. gr. of *Monobia*, DALLA TORRE, p. 28, Vespidae.
- Triarthra* n. gr. of *Monobia*, DALLA TORRE, p. 28, Vespidae.
- Trimeria buyssoni*, Argentina, BRÈTHES, p. 371, An. Mus. Buenos Aires (3) ii, n. sp.
- Tritodiscælius* n. gr. of *Discælius*, DALLA TORRE, p. 18, Vespidae.
- Vespa*: R. DU BUYSSON completes his monograph of *Vespa*, describing several varr. n. in addition to the new species mentioned below, Ann. Soc. ent. France 1904, pp. 485-556, plates v-x; *V. orbata* var. n. *aurulenta*, *V. rufa intermedia* var. n. p. 591, var. n. *americana*, p. 592, *V. norvegica* var. n. *adulterina*, p. 600, *V. silvestris* var. n. *sumptuosa*, p. 603, *V. germanica* var. n. *stizoides*, p. 615, DU BUYSSON, t. c.; *V. germanica*, nest, census, PECHLANER, Verh. Ges. Wien liv, p. 77; *V. rufa*, nest with *V. austriaca*, BERESFORD, p. 242, Irish Natural. 1904.
- V. barthelemyi*, Cambodia, DU BUYSSON, p. 618, Ann. Soc. ent. France 1904; *V. variabilis*, China, p. 522, *binghami*, Yunnan, p. 523, *eulemoides*, Andaman Islands, p. 530, *mocsaryana*, Malacca, p. 537, *walkeri*, China, p. 539, DU BUYSSON, Ann. Soc. ent. France 1904: n. spp.
- Wettsteinia* n. g. for *Labus* Sect. II Sauss., DALLA TORRE, p. 13, Vespidae.
- Zethoides* n. g. *Masaridæ*, p. 93, *Z. flavolineatus* n. sp., Panama, p. 94, CAMERON, Tr. Amer. ent. Soc. xxx.
- Zethus broomi*, S. Africa, CAMERON, p. 110, Rec. Albany Mus. i; *Z. himalayensis*, p. 13, *3-maculatus*, p. 14, Sikkim, CAMERON, Zeitschr. Hym. Dipt. iv; *Z. corallinus*, p. 135, *dimidiatus*, p. 136, Pará, DUCKE, Zeitschr. Hym. Dipt. iv: n. spp.

HYMENOPTERA FOSSORIA (or SPHEGOIDEA).

- [Cf. ADLERZ (13, 16), ANDRÉ (28-30), ASHMEAD (44, 46, 47, 48), AURIVILLIUS (59), BRÈTHES (181), DU BUYSSON (219), CAMERON (222, 224, 225, 227-230, 232-234, 238), DUCKE (413), ENDERLEIN (458), GARCIA (587, 588), KOPP (840), MANTERO (904), NURSE (986), PICARD (1080), SAUNDERS (1214, 1215), SAUSSURE (1218), SCHULZ (1253, 1254), TULLGREN (1404, 1405), VIERECK (1445, 1446, 1449, 1453), VIERECK & COCKERELL (1455).]

Synopsis of the *Fossoria* of Argentina, 57 spp., HOLMBERG, pp. 469–504, An. Mus. Buenos Aires (3) ii.

Classification of *Mutillidæ* completed, ASHMEAD, pp. 5–9, Canad. Ent. xxxvi; *Mutillidæ*, Ashmead's genera detailed and criticised, ANDRÉ, pp. 27–41, Rev. Ent. franc. xxiii.

Philanthidæ, N. American, revision and tables, VIERECK & COCKERELL, J. N. York Ent. Soc. xii, pp. 84, 129 etc.

The *Sphegidæ* of Sweden, AURIVILLIUS, Ent. Tidskr. xxv, pp. 241–300.

Localities for Palaearctic *Sphegidæ*, SCHULZ (1254).

Æluroides n. g. *Thynnidæ*, p. 428, *Æ. sjostedti* n. sp., Cameroons, p. 429, TULLGREN, Arkiv Zool. i.

Agencia cingulata, Manila, ASHMEAD, p. 133, P. U. S. Mus. xxviii; *A. lynchii*, Buenos Ayres, HOLMBERG, p. 494, An. Mus. Buenos Aires (3) ii : n. spp.

Ammophila bolanica ♂, NURSE, p. 25, J. Bombay Soc. xvi; *A. sabulosa*, habits, KOPP, pp. 344–346, Jahresh. Ver. Württemb. lx.

Ammoplanus ceanothæ, Pennsylvania, VIERECK, p. 72, Psycho xi, n. sp.

Ampulex hellmayri, Amazons, SCHULZ, p. 760, SB. Ak. München 1903, n. sp.

Anodontyna tricolor ♀, p. 317, *albofasciata* ♂, p. 318, ANDRÉ, Zeitschr. Hym. Dipt. iv.

Anoplius johannis, p. 126, *oneili*, p. 127, *A. (Ferrea?) gradatus*, *A. (Schizosalius?) melanostomus*, p. 128, *A. argenteodecoratus*, p. 129, *dumbrodyensis*, p. 130, *labialis*, *spilopus*, p. 131, *hirtiscapus*, p. 132, *trichiocephalus*, p. 133, *A. (Homonotus) spilonotus*, p. 134, *A. ? cænoceras*, p. 135, Cape Colony, CAMERON, Rec. Albany Mus. i, n. spp.

Anothyreus panurgoides, Pennsylvania, VIERECK, p. 239, Tr. Amer. ent. Soc. xxx, n. sp.

Apteropompilus dentatus, Uitenhage, CAMERON, p. 176, Zeitschr. Hym. Dipt. iv, n. sp.

Astata lucinda, Quetta, NURSE, p. 25, J. Bombay Soc. xvi, n. sp.

Aulacophilus eumenoides, Pará, DUCKE, p. 97, Zeitschr. Hym. Dipt. iv, n. sp.

Barymutilla alticola, W. Africa, ANDRÉ, p. 226, Ann. Mus. Genova xli, n. sp.

Bembex, characters of Spanish, GARCÍA, pp. 341–356, Bol. Soc. espan. iv.

B. handlirshi, p. 343, *miscella*, p. 345, *hispanica*, p. 347, Spain, GARCÍA, t. c.;

B. megadonta, Darjiling, CAMERON, p. 261, Entomologist 1904; *B. khasiana*, Assam, CAMERON, p. 123, Tr. ent. Soc. London 1904 : n. spp.

Bembidula simillima Sm. redescribed, DUCKE, p. 91, Zeitschr. Hym. Dipt. iv.

Bothynostethus collaris, Pará, p. 95, *clypealis*, Alemquer, p. 189, DUCKE, t. c. n. spp.

Cerceris rybensis dittrichi subsp. n., SCHULZ, p. 93, Zeitschr. Ent. Breslau xxix.

C. violaceipennis, p. 292, *latibalteata*, p. 293, N. India, CAMERON, Ann. Nat. Hist. xiii; *C. japonica*, *quinquecincta*, Japan, ASHMEAD, p. 66, J. N. York Ent. Soc. xii; *C. nasica*, *fidelis*, p. 132, *platyrhina*, *macrostieta*, p. 133, *ferruginior*, p. 134, *garciana*, *populorum*, *femur-rubrum*, p. 135, *convergens*, *chilopsidis*, p. 136, *rinconis*, *novomexicana*, p. 137, *crotonella*, *erigoni*, p. 139, *townsendi*, *vicinoides*, p. 140, New Mexico, VIERECK & COCKERELL, J. N. York Ent. Soc. xii; *C. perspicua*, p. 475, *paupercula*, *lævigata*, p. 476, *moyanoi*, p. 477, *caridei*, p. 478, *probo-scidea*, p. 479, *diademata*, p. 480, *melanogaster*, *gaudebunda*, p. 481, *polychroma*, p. 483, *campestris*, p. 484, *elephantinops* with var. *dissita*, p. 485, *bonaërens*, p. 486, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : n. spp.

Ceropales maculata, parasitic habits, ADLERZ, Bih. Svenska Ak. xxviii, Afd. iv, No. 14, 20 pp.

C. punctulata, Cape Colony, CAMERON, p. 138, Rec. Albany Mus. i, n. sp.

- Chlorion cyaneum*, synonymy, FERNALD, p. 120, Ent. News Philad. xv;
C. lobatus, food-habits, MAXWELL-LEFROY, p. 531, J. Bombay Soc. xv.
Clytochrysus dubiosus, Japan, ASHMEAD, p. 65, J. N. York Ent. Soc. xii,
 n. sp.
Crabro alatus japonicus subsp. n., SCHULZ, p. 99, Zeitschr. Ent. Breslau
 xxix.
C. trichiosomus, p. 260, *agycus*, p. 261, Himalaya, CAMERON, Entomologist
 1904, n. spp.
Dasyproctus philippinensis, Manila, ASHMEAD, p. 129, P. U. S. Mus. xxviii,
 n. sp.
Dielis testaceipes, Japan, CAMERON, p. 34, Entomologist 1904, n. sp.
Diodontus gracilipes, Tenerife, SAUNDERS, p. 202, Ent. Mag. xl; *D. crassi-*
cornis, Oregon, VIERECK, p. 243, Tr. Amer. ent. Soc. xxx : n. spp.
Dolichomutilla bolamana, W. Africa, ANDRÉ, p. 223, Ann. Mus. Genova xli,
 n. sp.
Dolichurus obidensis var. n. *maranhensis*, DUCKE, p. 91, Zeitschr. Hym.
 Dipt. iv.
Elaphroptera herbsti, Chile, ANDRÉ, p. 308, Zeitschr. Hym. Dipt. iv, n. sp.
Entomognathus lenapeorum, Pennsylvania, VIERECK, p. 239, Tr. Amer. ent.
 Soc. xxx, n. sp.
Ephuta (Photopsis) chilicola, Chile, ANDRÉ, p. 306, Zeitschr. Hym. Dipt. iv,
 n. sp.
Ephutopsis n. g. *Ephutina*, type *trinidadensis* Ashm., ASHMEAD, p. 6,
 Canad. Ent. xxxvi.
Eucerceris, tables of species, VIERECK & COCKERELL, pp. 84-88, J. N. York
 Ent. Soc. xii.
E. striareata, p. 85, *chapmanæ*, p. 86, *simulatrix*, p. 87, New Mexico, iid.
 t. c. n. spp.
Euspinolia, characters and components, ANDRÉ, p. 286, Zeitschr. Hym.
 Dipt. iv.
Gorytes levis ægyptiacus subsp. n., SCHULZ, p. 96, Zeitschr. Ent. Breslau
 xxix; *G. scutellaris*=(*Harpactes sanguinans* Dom.), *G. triangularis*
 Sm., taxonomical characters, DUCKE, p. 92, Zeitschr. Hym. Dipt. iv.
Homalothynnus n. g. *Thynnida*, p. 466, *H. eburneus* n. sp., Adelaide,
 p. 468, ENDERLEIN, Zool. Anz. xxvii.
Ischnolynthus n. g. near *Crabro*, *I. foveolatus* n. sp. Argentina, HOLMBERG,
 p. 472, An. Mus. Buenos Aires (3) ii.
Larra bicolorata, p. 294, *pygidialis*, p. 295, N. India, CAMERON, Ann. Nat.
 Hist. xiii; *L. apicepennis*, N. India, CAMERON, p. 302, t. c. : n. spp.
Liris violaceipennis, N. India, CAMERON, p. 300, Ann. Nat. Hist. xiii, n. sp.
Macromeris honestus, Sm. (as *Pompilus*)=(*aureopilosa* Cam.), CAMERON,
 p. 90, Zeitschr. Hym. Dipt. iv.
Megalomma quadricinctum, Manila, ASHMEAD, p. 132, P. U. S. Mus. xxviii,
 n. sp.
Meria quadrimaculata to *Myzine*, CAMERON, p. 90, Zeitschr. Hym. Dipt. iv.
Methoca ichneumonoides, habits, ADLERZ, pp. 255-258, Arkiv Zool. i.
Mimesa palliditarsis, Majorca, SAUNDERS, p. 605, Tr. ent. Soc. London
 1904, n. sp.
Monedula surinamensis, nesting habits, BRÉTHES, pp. 200-204, Revist. Mus.
 La Plata x.
Mutilla alecto, *M. æstuans* Gerst. is ♀, p. 227, *M. atricolor* ♂, p. 233,
 var. n. *ochraceomaculata*, p. 234, *M. cyparissa* ♀, p. 236, ANDRÉ,
 Ann. Mus. Genova xli.
M. sordidata, Cameroons, TULLGREN, p. 427, Arkiv Zool. i; *M. auro-*
decorata, p. 229, *omissa*, p. 231, *ignota*, p. 240, *principis*, p. 242,
polyacantha, p. 245 & var. *dichromatica*, p. 246, *sessiliventris*, p. 246,
varians, p. 247, *spinicollis*, p. 250, W. Africa, ANDRÉ, Ann. Mus.
 Genova xli; *M. vesta*, India, NURSE, p. 24, J. Bombay Soc. xvi; *M. inoa*,

- p. 279, *artaxa*, *trebia*, p. 280, N. India, CAMERON, Ann. Nat. Hist. xiii; *M. sceva*, p. 6, *gnatia*, p. 7, *tiza*, p. 8, Khasia hills, CAMERON, Zeitschr. Hym. Dipt. iv; *M. semperi*, Manila, ASHMEAD, p. 135, P. U. S. Mus. xxviii : **n. spp.**
- Myrmilla subspinosa*, W. Africa, ANDRÉ, p. 222, Ann. Mus. Genova xli, **n. sp.**
- Myzine*, *Apis fusiformis* De Geer, to this, TULLGREN, p. 462, Arkiv Zool. i. *Nectanebus fischeri fischeri*, and *fischeri algeriensis*, SCHULZ, pp. 9–11, Allg. Zeitschr. Ent. ix.
- Notogonia manila*, Philippines, ASHMEAD, p. 130, P. U. S. Mus. xxviii, **n. sp.**
- Nysson laufferi*, Madrid, GARCÍA, p. 392, Bol. Soc. espan. iv; *N. violaceipennis*, Sikkim, CAMERON, p. 10, Zeitschr. Hym. Dipt. iv; *N. submellipes*, *tramosericus*, p. 237, *daeckei*, p. 238, N. America, VIERECK, Tr. Amer. ent. Soc. xxx; *N. cressoni*, N. Mexico, CAMERON, p. 95, Tr. Amer. ent. Soc. xxx; *N. alfkeni*, Amazons, DUCKE, p. 190, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Ochleroptera* **n. g.** *O. oblita* **n. sp.**, Argentina, HOLMBERG, p. 487, An. Mus. Buenos Aires (3) ii.
- Odontolarra nigra*, Sikkim, CAMERON, p. 12, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Odontophopsis acmæus*, p. 84, *subtenuis*, *trunculus*, p. 85, *crucis*, p. 86, *sercus*, *alamonis*, p. 87, *avellanus*, p. 88, *fallax*, *indotatus*, p. 89, *augustus*, p. 90, *delodontus*, p. 91, VIERECK, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Odontothynnus* **n. g.** *Thynnides*, p. 161, *O. bidentata*, *lacteipennis*, p. 162, **n. spp.**, S. Africa, CAMERON, Rec. Albany Mus. i.
- Ornepetes albonotata*, Chile, ANDRÉ, p. 314, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Oxybelus platensis*, Buenos Aires, **n. sp.**, p. 195, with notes on habits and instincts, pp. 196–200, pl. i, BRÉTHES, Revist. Mus. La Plata x.
- Paniscomima* **n. g.** *Rhopalosomide*, p. 465, for *P. erlangeriana* **n. sp.**, Somaliland, p. 466, ENDERLEIN, Zool. Anz. xxvii.
- Paranothyreus rugicollis*, New Jersey, VIERECK, p. 241, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Paratiphia 12-maculata*, Panama, CAMERON, p. 94, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Passalaccus* (sic) *rivertonensis*, New Jersey, VIERECK, p. 243, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Philanthus camerunensis*, Africa, TULLGREN, p. 444, pl. xxiii, fig. 7, Arkiv Zool. i; *P. punctinudus*, p. 144, *crotoniphilus*, p. 145, New Mexico, VIERECK & COCKERELL, J. N. York Ent. Soc. xii : **n. spp.**
- Piagetia varicornis*, Sikkim, CAMERON, p. 11, Zeitschr. Hym. Dipt. iv; *P. ruficollis*, Singapore, CAMERON, p. 119, J. Straits Asiatic Soc. xli : **n. spp.**
- Pison pallidipalpe*, description, SCHULZ, p. 214, Berlin. ent. Zeitschr. xlix.
- P. laguna*, Philippines, ASHMEAD, p. 131, P. U. S. Mus. xxviii, **n. sp.**
- Pisonitus argenteus*, Philippines, ASHMEAD, p. 131, t. c. **n. sp.**
- Podium* (*Parapodium*) *batesianum*, Amazons, SCHULZ, p. 772, SB. Ak. Munchen 1903, **n. sp.**
- Pompilus viaticus*, habits, PICARD, pp. 142–145, Feuille Natural. xxxiv.
- P. doriae*, Tuscany, MANTERO, p. 453, Ann. Mus. Genova xli; *P. poultoni*, Majorca, SAUNDERS, p. 600, Tr. ent. Soc. London 1904; *P. guimarensis*, Tenerife, SAUNDERS, p. 200, Ent. Mag. xl; *P. bifasciatus*, Cameroons, TULLGREN, p. 441, pl. xxiii, fig. 6, Arkiv Zool. i; *P. suspectus*, Cambodia, pl. xii, fig. 4, p. 200, SAUSSURE, Mission Pavie iii; *P. spilopterus*, p. 496, *phœnicogaster*, p. 497, *tobarum*, p. 498, *autrani*, p. 499, *hermannii*, p. 501, *yanketruz*, p. 502, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**

- Prionocnemis parcedentatus*, Tonkin, pl. xii, fig. 3, p. 200, SAUSSURE, Mission Pavie iii; *P. australis*, p. 490, *pampicola*, *fratellus*, *atelerhythrus*, p. 491, *tenuis*, *ignitus*, *fidanza*, p. 492, *nigrorufus*, *carbonarius*, *silvicola*, p. 493, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : n. spp.
- Psen rufobalteata*, Khasia hills, CAMERON, p. 219, Ann. Nat. Hist. xiii, n. sp.
- Pseudagenia longitarsis*, p. 135, *robusta*, p. 136, *iridipennis*, *æthiopica*, p. 137, Cape Colony, CAMERON, Rec. Albany Mus. i; *P. lepcha*, N. India, CAMERON, p. 291, Ann. Nat. Hist. xiii; *P. unifasciata*, Philippines, ASHMEAD, p. 7, J. N. York Ent. Soc. xii : n. spp.
- Pseudelaphroptera flavomaculata*, Chile, ANDRÉ, p. 311, Zeitschr. Hym. Dipt. iv, n. sp.
- Pseudomethoca herbsti*, Chile, ANDRÉ, p. 284, t. c. n. sp.
- Pseudosalix* n. g. for *Salix bipartitus* Lep., ASHMEAD, p. 132, P. U. S. Mus. xxviii.
- Pycnomutilla* n. g. type *M. waco* Bl., ASHMEAD, p. 8, Canad. Ent. xxxvi.
- Reedia* n. g. type *Mutilla atripennis* Spin., ASHMEAD, p. 9, t. c.; *Reedia*, characters, p. 288, *R. gayi* ♂, p. 305, ANDRÉ, Zeitschr. Hym. Dipt. iv; *Rhopalum albocollare*, Manila, ASHMEAD, p. 130, P. U. S. Mus. xxviii; *R. patagonicum*, p. 470, *lynchii*, p. 471, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : n. spp.
- Salix ochropus* Stål., description, p. 435, pl. xxii, fig. 1, TULLGREN, Arkiv Zool. i; *S. fulgidipennis* to *Pallosoma*, ASHMEAD, p. 132, P. U. S. Mus. xxviii.
- S. trichosoma*, p. 289, *frederici*, p. 290, *lugubrinus*, p. 291, N. India, CAMERON, Ann. Nat. Hist. xiii; *S. æneus*, Sikkim, CAMERON, p. 10, Zeitschr. Hym. Dipt. iv; *S. pavianus*, Cambodia, pl. xii, figs. 1, 2, p. 199, SAUSSURE, Mission Pavie iii : n. spp.
- Sapyga wagneriella*, Minas Geraes, DU BUYSSON, p. 146, Bull. Soc. ent. France 1904, n. sp.
- Schizanoptilus* n. g. *Ceropalinae*, p. 125, *S. violaceipennis* n. sp., Cape Colony, p. 126, CAMERON, Rec. Albany Mus. i.
- Scolia*, notes on species from Java etc., TULLGREN, pp. 465-472, Arkiv Zool. i; *S. erythrogaster*, p. 459, *leonina*, p. 461, identified and redescribed, TULLGREN, t. c.
- S. (Elis) propinqua*, p. 432, *deserta*, *æthiopica*, p. 433, Cameroons, TULLGREN, Arkiv Zool. i; *S. magnificus*, p. 437, pl. xxii, fig. 2, *nigricans*, fig. 3, p. 438, *S. (Cyphonyx) camerunensis*, pl. xxiii, fig. 4, p. 439, *nigricornis*, fig. 5, p. 440, Cameroons, TULLGREN, Arkiv Zool. i; *S. (Discolia) erythrotrichia*, N. India, CAMERON, p. 9, Zeitschr. Hym. Dipt. iv; *S. (Triscolia) triangulifer*, p. 466, *S. (Discolia) billitonensis*, p. 467, *S. (Dielis) similima*, p. 470, *fumata*, p. 471, Java, TULLGREN, Arkiv Zool. i; *S. manila*, Philippines, ASHMEAD, p. 8, J. N. York Ent. Soc. xii : n. spp.
- Solenius*, note on habits, KOPP, pp. 348-350, Jahresh. Ver. Wurttemb. lx.
- Soleriella canariensis*, Tenerife, SAUNDERS, p. 201, Ent. Mag. xl; *S. amazonica*, Alemquer, DUCKE, p. 96, Zeitschr. Hym. Dipt. iv : n. spp.
- Stenocrabro nelli*, p. 241, *flavitrochantericus*, p. 242, N. America, VIERECK, Tr. Amer. ent. Soc. xxx, n. spp.
- Stizus pécilopterus* ♂, MORICE, p. 2, Jägerskiöld exp. No. 14; *S. tridens* and *cyanescens*, SCHULZ, p. 95, Zeitschr. Ent. Breslau xxix.
- Tachysphex tinctipennis*, N. India, CAMERON, p. 301, Ann. Nat. Hist. xiii; *T. propinquus*, Arizona, VIERECK, p. 87, Ent. News Philad. xv : n. spp.
- Tachytes rufipalpis*, p. 296, *assamensis*, *fulvopilosa*, p. 297, *fulvovestita*, p. 298, *maculipennis*, p. 299, N. India, CAMERON, Ann. Nat. Hist. xiii, n. spp.
- Thyreosphex* n. g. near *Tachysphex*, *T. stantoni* n. sp., Philippines, ASHMEAD, Canad. Ent. xxxvi.

- Tiphia clarinerva*, p. 281, *himalayensis*, p. 282, *robusta*, p. 283, *denticula*, p. 284, *tuberculata*, p. 285, *fulvinerva*, p. 286, *simlaensis*, p. 287, *quinquecarinata*, p. 288, N. India, CAMERON, Ann. Nat. Hist. xiii, n. spp.
- Trachypus martialis*, Argentina, HOLMBERG, p. 489, An. Mus. Buenos Aires (3) ii, n. sp.
- Trypoxylon foveatum*, Cape Colony, CAMERON, p. 139, Rec. Albany Mus. i; *T. placidum*, p. 216, *fulvocollare*, p. 217, *hasia*, *orientale*, p. 218, N. India, CAMERON, Ann. Nat. Hist. xiii; *T. philippinensis*, Manila, ASHMEAD, p. 283, Canad. Ent. xxxvi : n. spp.

FORMICIDÆ (or HETEROGYNA).

- [Cf. COOK (309-311), EMERY (452, 453), FIELDE (501-507), FIELDE & PARKER (508), FOREL (523-532), HOLMGREN (701), MAYR (927, 928), MUCKERMANN (968), RUZSKY (1202), WASMANN (1481, 1483, 1484, 1484A), WELLENIUS (1508), WHEELER (1517-1523).]
- Comparison of forms of *Dorylinæ* and limits of the family, EMERY, Arch. zool. ital. ii, pp. 107-116, cuts.
- New inquiline and ♂ ergatoid ants, WHEELER, Bull. Amer. Mus. xx, pp. 1-17.
- Polymorphism discussed, EMERY (452), FOREL (525).
- Mental capacities of Ants, WASMANN (1483).
- For various papers on habits of ants see p. 87, Ethology.
- Mounds in swamps due to *Formica exsecta*, HOLMGREN, pp. 353-370, cuts, Zool. Jahrb. Syst. xx.
- Portable nests, instructions for making, FIELDE (505).
- Acanthostichus texanus*, Brownsville, FOREL, p. 168, Ann. Soc. ent. Belgique xlviii, n. sp.
- Anochetus traogaordhi*, Khartoum, MAYR, p. 2, Jägerskiöld exp. No. 9, n. sp.
- Anomma emeryi* var. n. *pulsi*, FOREL, p. 170, Ann. Soc. ent. Belgique xlviii.
- Atta cephalotes* varr. n. *opaca*, *integrrior*, p. 31, *A. rugosa* var. n. *rochai*, p. 34, FOREL, Rev. Suisse Zool. xii; *A. coronata*, worker, FOREL, p. 176, Ann. Soc. ent. Belgique xlviii.
- A. (Acromyrmex) emilii*, Para, FOREL, p. 32, Rev. Suisse Zool. xii, n. sp.
- Azteca schumanni* var. n. *tædiosa*, p. 42, *festai subdentata* and *mediops* subspp. n. p. 43, *chartifex* var. n. *decipiens*, *alfaroi* var. n. *ovaticeps*, p. 44, *velox paraensis* subsp. n. p. 45, FOREL, t. c.; *A. alfari æquilata* var. n. p. 691, *traili filicis* var. n. p. 692, *traili tococæ* var. n. p. 693, *longiceps juruensis* var. n. p. 699, FOREL, Zool. Jahrb. Syst. xx.
- A. olitrix*, p. 693, *ulei*, p. 694, with varr. n. *cordicæ* and *nigricornis*, p. 695, *minor*, p. 696, *duroia*, p. 697, *emeryi*, p. 698, *coussapocæ*, p. 700, *tachigaliæ*, p. 701, Amazons, *emmae*, Costa Rica, p. 702, FOREL, t. c. n. spp.
- Camponotus maculatus* var. n. *atramentarius*, p. 379, *herculeanus* var. n. *sachalinensis*, p. 381, FOREL, Annuaire Mus. St. Petersb. viii; *C. maculatus* var. n. *cachmiriensis*, FOREL, p. 29, Rev. Suisse Zool. xii; *C. hyatti* var. n. *bakeri*, WHEELER, p. 271, Bull. Amer. Mus. xx; *C. maculatus sanctus* n. st., FOREL, p. 18, Rev. Suisse Zool. xii; *C. maculatus ballioni* n. st., FOREL, p. 176, Ann. Soc. ent. Belgique xlviii, *C. maculatus xerxes* n. st., FOREL, p. 424, t. c., *C. herculeanus* var. *whymperi*, characters, FOREL, p. 152, t. c.; *C. senex*, using larva, p. 45, *C. wrichii* var. n. *scutina* and subsp. n. *folicola*, p. 46, *melanoticus* a valid species, p. 49, *C. integellus*=(*rudigenis* Em.), *femoratus* redescribed, p. 49, *novogranadensis* var. n. *modestior*, *rectangularis* var. n. *setipes*, p. 51, FOREL, Rev. Suisse Zool. xii.
- C. socrates*, N. India, FOREL, p. 27, t. c.; *C. ulei*, Peru, FOREL, p. 706, Zool.

- Jahrb. Syst. xx; *C. amoris*, Amazons, FOREL, p. 51, Rev. Suisse Zool. xii : n. spp.
- Cardiocondyla nuda*, ergatomorph ♂, ♀, FOREL, p. 7, t. c.
- Carebara sicheli* redescribed, MAYR, p. 596, Verh. Ges. Wien liv.
- C. junodi*, Africa, FOREL, p. 154, Ann. Soc. ent. Belgique xlviii, n. sp.
- Colobopsis*, or stopper-headed ants, account of, FOREL, pp. 139–158, cuts, *C. abditus* var. n. *etiolatus*, p. 150, WHEELER, Bull. Amer. Mus. xx.
- C. pylartes*, Texas, WHEELER, p. 147, t. c. n. sp.
- Cremastogaster stollii amazonensis* var. n. p. 682, *C. limata parabiatica* subsp. n. p. 683, FOREL, Zool. Jahrb. Syst. xx; *C. dalyi* var. n. *sikkimensis*, FOREL, p. 24, Rev. Suisse Zool. xii, *C. inermis lucida* ♂, FOREL, p. 6, t. c., *C. longispina tenuicola* subsp. n. p. 36, *distans paraensis* n. st. p. 37, FOREL, t. c.
- C. binghamii*, Sikkim, FOREL, p. 24, t. c., *C. pygmæa*, Ceara, FOREL, p. 37, t. c. : n. spp.
- Cryptocerus complanatus ramiphilus* subsp. n., FOREL, p. 678, Zool. Jahrb. Syst. xx.
- Dolichoderus plagiatus* var. n. *beutenmulleri*, WHEELER, p. 304, Bull. Amer. Mus. xx.
- Dorylus nigricans* varr. p. 671, *fulvus dentifrons* subsp. n. p. 673, WASMANN, Zool. Jahrb. Suppl. vii.
- D. (Anomma) kohli*, Congo, WASMANN, p. 669, t. c. n. sp.
- Dorymyrmex goldii*, Para, FOREL, p. 41, Rev. Suisse Zool. xii; *D. antarcticus*, Patagonia, FOREL, p. 6, Hamburg. Magalhaen. Reise vii : n. spp.
- Eciton selysi*, Brazil, FOREL, p. 169, Ann. Soc. ent. Belgique xlviii, n. sp.
- Ectatomma ferrugineum*, pupation, COOK, p. 310, and WHEELER, pp. 437–440, Science xx.
- Epipheidole* n. g. near *Pheidole*, p. 14, *E. inquilina* n. sp., Colorado, p. 15, WHEELER, Bull. Amer. Mus. xx.
- Euponera (Mesoponera) sulcigera*, Cape colony, MAYR, p. 593, Verh. Ges. Wien liv, n. sp.
- Formica fusca* var. n. *rubescens*, FOREL, p. 423, Ann. Soc. ent. Belgique xlviii; *F. rufa* var. n. *whymperi*, p. 152, *dacotensis* var. n. *wasmanni*, p. 153, FOREL, t. c.; *F. pallidefulva* varr. n. *succinea*, p. 369, *meridionalis*, p. 370, *F. difficilis* var. n. *consocians*, p. 371, *F. microgyna* var. n. *nevadensis*, p. 373, WHEELER, Bull. Amer. Mus. xx; *F. rubicunda*, pseudogynes and *Xenodusa*, MUCKERMANN, Ent. News Philad. xv, pp. 339–341, pl. xx; *F. sanguinea*, habits, WASMANN (1484).
- F. adelungi*, Gobi desert, FOREL, p. 385, Annuaire Mus. St. Petersb. viii; *F. montigena*, Colorado, WHEELER, p. 374, Bull. Amer. Mus. xx : n. spp.
- Iridomyrmex anceps* var. n. *sikkimensis*, FOREL, p. 27, Rev. Suisse Zool. xii.
- Lasius niger* var. n. *flavescens*, FOREL, p. 386, Annuaire Mus. St. Petersb. viii.
- Leptanilla*, affinities, EMERY, pp. 107–116, Arch. Zool. ital. ii.
- Leptogenys elongata*, characters and habits, WHEELER, Biol. Bull. vi, pp. 251–259.
- Leptothorax bulgaricus* var. n. *melleus*, FOREL, p. 375, Annuaire Mus. St. Petersb. viii; *L. unifasciatus* var. n. *tauricus*, RUZSKY, p. 22, Protok. Kazan Univ. 1902, 1903, No. 206; *L. rothneyi* var. n. *simlensis*, FOREL, p. 22, Rev. Suisse Zool. xii; *L. tuberum* var. n. *dichroa*, EMERY, p. 452, Ann. Mus. Genova xli.
- L. alpinus*, Caucasus, RUZSKY, p. 22, Protok. Kazan Univ. 1902, 1903, No. 6; *L. wroughtonii*, N. India, FOREL, p. 22, Rev. Suisse Zool. iii : n. spp.
- Megalomyrmex emeryi*, Surinam, FOREL, p. 174, Ann. Soc. ent. Belgique xlviii, n. sp.
- Melophorus sauberi*, Patagonia, p. 4, *valdiviensis*, Chile, p. 6, FOREL, Hamburg. Magalhaen. Reise vii, n. spp.

- Monomorium minutum ergatogyna* subsp. n., WHEELER, p. 269, Bull. Amer. Mus. xx; *M. denticulatum* var. n. *navarinensis*, FOREL, p. 7, Hamburg. Magalhaen. Reise vii.
- M. luisae*, Kashmir, FOREL, p. 25, Rev. Suisse Zool. xii, n. sp.
- Myrmecocystus viaticus* varr. n. *abyssinicus* and *adenensis*, FOREL, p. 382, Annuaire Mus. St. Petersb. viii.
- Myrmelachista ruzskyi* for *ruszki*, FOREL, p. 1, Rev. Suisse Zool. xii.
- M. ulei*, Peru, *chilensis*, p. 704, *rectinota*, p. 705, Chile, FOREL, Zool. Jahrb. Syst. xx, n. spp.
- Myrmica rubra* varr. n. *whymperi*, *glacialis*, FOREL, p. 154, Ann. Soc. ent. Belgique xlviii; *M. rubra* var. n. *tenuispina*, FOREL, p. 374, Annuaire Mus. St. Petersb. viii; *M. smythiesi* varr. n. *fortior*, p. 22, *lutescens*, p. 23, FOREL, Rev. Suisse Zool. xii.
- Oxyopomyrmex santschii*, Kairouan, FOREL, p. 8, nest and habits, p. 10, t. c. n. sp.
- Paltothyreus tarsatus*, offensive odour, POULTON, p. xl, P. ent. Soc. London 1904.
- Pheidole sinaitica laticeps* subsp. n., MAYR, p. 6, Jägerskiöld exp. No. 9; *P. minutula folicola* subsp. n., FOREL, p. 681, Zool. Jahrb. Syst. xx; *P. ursus* var. n. *gracilinoda*, FOREL, p. 172, Ann. Soc. ent. Belgique xlviii; *P. megacephala* subsp. n. *impressifrons* (*impressiceps*, p. 72, altered p. 110), WASMANN, Notes Leyden Mus. xxv.
- P. termitophila*, Soudan, FOREL, p. 13, Jägerskiöld exp. No. 13; *P. ceres*, Colorado, WHEELER, p. 10, Bull. Amer. Mus. xx; *P. severini*, Cayenne, FOREL, p. 171, Ann. Soc. ent. Belgique xlviii : n. spp.
- Plagirolepis brunni* var. n. *nilotica*, MAYR, p. 7, Jägerskiöld exp. No. 9.
- P. deweti*, Natal, FOREL, p. 423, Ann. Soc. ent. Belgique xlviii, n. sp.
- Podomyrma silvicola* var. n. *dimidiata*, FOREL, p. 170, t. c.
- Pogonomyrmex occidentalis*, oecological note, POPENOE, p. 360, Canad. Ent. xxxvi.
- Polyrhachis gracilis alata*, worker, FOREL, p. 177, Ann. Soc. ent. Belgique xlviii.
- P. menelas*, Simla, FOREL, p. 30, Rev. Suisse Zool. iii, n. sp.
- Ponera eduardi*, apterous male, FOREL, p. 421, Ann. Soc. ent. Belgique xlviii.
- Prenolepis jägerskiöldi*, Cairo, MAYR, p. 8, Jägerskiöld exp. No. 9; *P. tregaardii*, Soudan, FOREL, p. 14, Jägerskiöld exp. No. 13 : n. spp.
- Procryptocerus hirsutus convexus* subsp. n., FOREL, p. 34, Rev. Suisse Zool. xii.
- Pseudomyrma*, Smith's species irreconisable, p. 683, *P. dendroica emarginata* var. n. p. 684, *latinoda tachigalix* subsp. n. p. 686, *caroli*, *sapii* var. n. p. 688, *sericea* varr. n. *cordix* and *longior*, p. 690, FOREL, Zool. Jahrb. Syst. xx; *P. latinoda* var. n. *nigrescens*, *P. arborissanctæ symbiotica*, p. 38, *P. kunkeli* var. n. *dichroa*, p. 41, FOREL, Rev. Suisse Zool. xii; *P. latinoda* var. n. *opacior*, FOREL, p. 170, Ann. Soc. ent. Belgique xlviii.
- P. triplariidis*, p. 684, *ulei*, p. 689, Amazons, FOREL, Zool. Jahrb. Syst. xx; *P. dendroica*, Amazons, FOREL, p. 40, Rev. Suisse Zool. xii : n. spp.
- Rhopalothrix procera* var. n. *ballioni*, FOREL, p. 175, Ann. Soc. ent. Belgique xlviii.
- Sima sahlbergi* var. n. *deplanata*, FOREL, p. 375, Annuaire Mus. St. Petersb. viii.
- Solenopsis texana catalinae*, subsp. n., WHEELER, p. 269, Bull. Amer. Mus. xx; *S. corticalis amazonensis* subsp. n., FOREL, p. 680, Zool. Jahrb. Syst. xx; *S. corticalis* var. n. *virgula*, *S. geminata pylades* subsp. n., FOREL, p. 172, Ann. Soc. ent. Belgique xlviii; *S. geminata*, ravages in Porto Rico, BARRETT, Bull. Dep. Agric. Jamaica ii, p. 204.
- S. moelleri*, Blumenau, p. 173, with var. *gracilior*, p. 174, FOREL, Ann. Soc. ent. Belgique xlviii, n. sp.

- Stenamma barbarus* var. n. *persicus*, FOREL, p. 175, t. c.; *S. patrulee bakeri* subsp. n., WHEELER, p. 270, Bull. Amer. Mus. xx.
- S. (Messor) bugnioni*, Biskra, FOREL, p. 13, Rev. Suisse Zool. xii, n. sp.
- Strongylognathus christophi* var. n. *rehbinderi*, a slave-making expedition, pp. 2-4, FOREL, t. c.
- Strumigenys membranifera* var. n. *santschii*, FOREL, p. 6, t. c.
- S. ludovici*, Madagascar, FOREL, p. 369, Annuaire Mus. St. Petersb. viii, n. sp.
- Symmyrmica* n. g. near *Formicoxenus*, p. 3, *S. chamberlini* n. sp., Colorado, p. 5, WHEELER, Bull. Amer. Mus. xx.
- Sympheisole* n. g. p. 7, *S. elecebra* n. sp., Colorado, p. 8, WHEELER, t. c.
- Tapinoma erraticum israelis* subsp. n., FOREL, p. 16, Rev. Suisse Zool. xii.
- T. wroughtonii*, N. India, FOREL, p. 26, t. c., *T. antarcticum*, Chile, FOREL, p. 17, t. c. : n. spp.
- Tetramorium cæspitum* var. n. *splendens*, RUZSKY, p. 33, Protok. Kazan Univ. 1902, 1903, No. 6; *T. cæspitum* var. n. *biskrensis*, FOREL, p. 13, t. c., *T. cæspitum* var. n. *schmidtii*, FOREL, p. 15, t. c.; *T. cæspitum* var. n. *forte*, FOREL, p. 371, Annuaire Mus. St. Petersb. viii.
- T. elizabethæ*, Sind, FOREL, p. 20, Rev. Suisse Zool. xii, n. sp.
- Tomognathus sublaevis*, habits, WELLENUS, pp. 70-72, Medd. Soc. Faun. Fenn. 1902/1903.

CHRYSIDÆ.

- [Cf. ASHMEAD (44), DU BUYSSON (217), DUCKE (412), GARCIA (585, 586), MOCSÁRY (952), NURSE (986), VIERECK (1447).]
- Annotated list and table of genera and species of *Chrysid.* observed at Parà, DUCKE, pp. 13-48, Bull. Soc. ent. ital. xxxvi.
- Chrysis succincta* varr. n. *ignifacies* and *alicantina*, GARCIA, p. 86, Bol. Soc. espan. iv; *C. acceptabilis*=(*thalia* Nurse), NURSE, p. 19, J. Bombay Soc. xvi; *C. chlorochrysa*=(*subcærulea* Rad.=*hoggei* Nurse), NURSE, p. 21, t. c.
- C. (Tetrachrysis) escaleraï*, Akbès, p. 87, *C. (Hexachrysis) dusmeti*, Cairo, p. 88, GARCIA, Bol. Soc. espan. iv; *C. (Holochrysis) modesta*, p. 404, *auronitens*, *pleuralis*, p. 405, *C. (Tetrachrysis) cylindracea*, p. 406, *gazella*, p. 407, *chalcogaster*, p. 408, *eusoma*, p. 409, *cyanops*, p. 410, *callizona*, p. 411, *grata*, p. 412, S. Africa, MOCSÁRY, Ann. Mus. Hungar. ii; *C. sara*, p. 20, *deposita*, p. 21, *urana*, *reparata*, p. 22, Quetta, NURSE, J. Bombay Soc. xvi; *C. cecilia*, Java, p. 259, *ruppelli*, Abyssinia, *jheringi*, Brazil, p. 260, *tellinii*, *scabiosa*, E. Africa, p. 262, *districta*, W. Africa, p. 263, *goyasensis*, *myops*, p. 264, *ypirangensis*, p. 265, S. America, *alfkenella*, California, p. 266, *kathederi*, Turkey, p. 269, *rubropicta*, Abyssinia, p. 270, *alluaudi*, Madagascar, p. 272, BUYSSON, Rev. Ent. franc. 1904 : n. spp.
- Chrysogona silvestrii*, S. America, DUCKE, p. 32, Bull. Soc. ent. ital. xxxvi, n. sp.
- Cleptes nigrita*, Spain, GARCIA, p. 83, Bol. Soc. espan. iv, n. sp.
- Cleptidea* n. g. for *Cleptes aurora*, *mutilloides*, *fasciata*, *xanthomelæna*, MOCSÁRY, p. 567, Ann. Mus. Hungar. ii.
- Ellampus hypocrita*=(*timidus* Nurse), NURSE, p. 19, J. Bombay Soc. xvi.
- Euchreides* n. g. *oblatus* n. sp., Quetta, NURSE, p. 23, t. c.
- Hedychridium*, table of Spanish, *H. minutum* var. n. *melanogaster*, p. 146, GARCIA MERCET, pp. 144-152, Bol. Soc. espan. iv.
- H. auriventris*, Spain, GARCIA, p. 85, t. c.; *H. dubium*, Segovia, GARCIA MERCET, p. 147, t. c.; *H. andreinii*, Erythrea, *moricei*, Zante, DU BUYSSON, p. 256, Rev. Ent. franc. 1904; *H. amatum*, p. 19, *rotundum*, p. 20, DEESA, NURSE, J. Bombay Soc. xvi : n. spp.

- Hedychrum alluaudi*, Madagascar, BUYSSON, p. 258, Rev. Ent. franc. 1905 ;
H. stantoni, Philippines, ASHMEAD, p. 283, Canad. Ent. xxxvi : n. spp.
Holopyga gloriosa var. n. *intermedia*, GARCIA, p. 85, Bol. Soc. espan. iv.
H. wagneriella, Argentina, DU BUYSSON, p. 255, Rev. Ent. franc. 1904,
 n. sp.
Notozus violascens (= *kashmirensis* Nurse), NURSE, p. 19, J. Bombay Soc. xvi.
N. decorsei, Centr. Africa, DU BUYSSON, p. 253, Rev. Ent. franc. 1904, n. sp.
Parnopes oberthuri, Silvapoor, p. 273, *digueti*, Mexico, p. 274, BUYSSON,
 Rev. Ent. franc. 1904 ; *P. hageni*, p. 246, *henshawii*, p. 247, *concinna*,
diadema, p. 248, *teniata*, *arizonensis*, p. 249, *excurvata*, p. 250,
 N. America, VIERECK, Tr. Amer. ent. Soc. xxx : n. spp.
Spintharis bispinosa ♂, MOSCÁRY, p. 404, Ann. Mus. Hungar. ii.
Stilbum cyanurum, note, TULLGREN, p. 426, Arkiv Zool. i.

HYMENOPTERA PARASITICA.

- Guests in Italian galls, *Hymenoptera*, STEGAGNO, Marcellia iii, pp. 27-44,
 and 51-52.
 Parasites, list of, with hosts, JACOBS, p. 308, Ann. Soc. ent. Belgique xlviii.

ICHNEUMONIDÆ.

- [Cf. ASHMEAD (43, 45, 47, 48), BERTHOUMIEU (110-113), BRADLEY (164),
 BUGNION (198, 199), CAMERON (224-226, 230-233, 237, 239, 241),
 ENDERLEIN (465), FELT (495 A), FYLES (575), KOKUJEV (826-828),
 KRIEGER (845), ROMAN (1186, 1187), SCHMIEDEKNECHT (1231), STROBL
 (1350), SZÉPLIGETI (1366), VIERECK (1452).]
 The genera of the subfam. *Ichneumoninae* revised, and their species listed,
 BERTHOUMIEU, Wytsman Gen. Ins. fasc. xviii.
 STROBL concludes his Catalogue of the *Ichneumonidæ* of Styria, 1206 spp.
 of which 165 are new, Mt. Ver. Steiermark xl, pp. 43-160.
 The stalked eggs and oviposition of *Rhyssa*, BUGNION, Bull. Soc. Vaudoise
 xl, pp. 245-249, pl. xl, and Bull. Soc. ent. France 1904, pp. 80-83, cuts.
Acanthocryptus nigriceps ♀, STROBL, p. 148, Mt. Ver. Steiermark xl.
Aconias n. g. *Cryptini*, p. 345, *A. spinitaris* n. sp., Darjeeling, p. 346,
 CAMERON, Zeitschr. Hym. Dipt. iv.
Acronus saliiiformis, p. 67, *niger*, *auritus*, p. 68, Trop. Africa, ENDERLEIN,
 Zool. Anz. xxviii, n. spp.
Agrothereutes unifasciatus, *albicoxis*, Manila, ASHMEAD, p. 142, P. U. S.
 Mus. xxviii, n. spp.
Algalitia rufopetiolata, p. 222, *tibialis*, p. 223, *latibalteata*, p. 224, *rufipes*,
 p. 225, *erythropoda*, p. 226, *varipes*, p. 227, *rothneyi*, p. 228, *robusta*,
 p. 229, *flavobalteata*, p. 230, *femorata*, p. 231, *cariniscutis*, p. 232,
 Khasia hills, CAMERON, Ann. Nat. Hist. xiii, n. spp.
Allexetastes subg. n. cf. *Exetastes*.
Alystria n. g. p. 340, *A. curvilineata* n. sp., p. 341, Darjeeling, CAMERON,
 Zeitschr. Hym. Dipt. iv.
Amblyteles chalybeatus, characters, ROMAN, p. 139, Ent. Tidskr. xxv.
A. styriacus, p. 144, *denticornis*, p. 146, Styria, STROBL, Mt. Ver. Steiermark
 xl ; *A. catagraphus*, Setschuan, KOKUJEV, p. 11, Rev. Russe ent. iv :
 n. spp.
Amesolytus pictus, N. America, FYLES, p. 207, cut, Canad. Ent. xxxvi, n. sp.
Angitia anthrocostoma, p. 85, *laricinella* (= *nana* Ratz. nec Gr.), p. 86,
novakii, p. 87, Styria, STROBL, Mt. Ver. Steiermark xl, n. spp.
Anilasta rufocincta var. n. *maculipes*, STROBL, p. 90, t. c.
A. nigromaculata, p. 88, *calcanea*, p. 90, Styria, STROBL, t. c. n. spp.
Aniseres subalpinus, Admont, STROBL, p. 138, t. c. n. sp.

- Anisobas tschitscherini*, Transcaucasus, KOKUJEV, p. 199, Rev. Russe Ent. iv, **n. sp.**
- Anomalon debile*, *varitarsum*, distinguished, p. 173, *A. delarvatum* and *trochanteratum*, p. 174, KRIEGER, Zeitschr. Hym. Dipt. iv.
- Apæleticus brevicornis* ♀, *inclytus* ♀, BERTHOUMIEU, p. 14, Echange 1904.
- Aperileptus inamœnus*, var. ? *trivittatus* var. n., STROBL, p. 120, Mt. Ver. Steiermark xl.
- A. minimus*, p. 121, *rufus*, p. 122, *nigrovittatus*, p. 123, *nigricarpus*, p. 124, Styria, STROBL, t. c. **n. spp.**
- Astomaspis metathoracica*, Manila, ASHMEAD, p. 140, P. U. S. Mus. xxxviii, **n. sp.**
- Atrometus minutus*, Manila, ASHMEAD, p. 144, t. c. **n. sp.**
- Atropa clypearia*, Manila, ASHMEAD, p. 143, t. c. **n. sp.**
- Barichneumon heracleæ* ♂, MORLEY, p. 37, Ent. Mag. xl.
- Bassus pulchellus* var. n. *alpigena*, STROBL, p. 156, Mt. Ver. Steiermark xl.
- Bathrythrix striatus*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Blapticius xanthocephalus*, Admont, STROBL, p. 113, Mt. Ver. Steiermark xl, **n. sp.**
- Canocryptus remex* Tschek, habits, = (*laticrus* Thoms.), PFANKUCH, p. 225, Zeitschr. Hym. Dipt. iv.
- Camarota madagascariensis*, Madagascar, SZÉPLIGETI, p. 336, Bull. Mus. Paris ix, **n. sp.**
- Campoplex polyxanthus*, p. 59, *rufiventris*, p. 61, *alpinus*, p. 621, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Casitaria arvensis* ♀, STROBL, p. 71, t. c.
- C. cingulata*, Styria, STROBL, p. 68, t. c. **n. sp.**
- Catadelphus dumsati*, Escorial, BERTHOUMIEU, p. 161, Bol. Soc. espan. iv, **n. sp.**
- Catomerus alpigenus*, Styria, STROBL, p. 116, Mt. Ver. Steiermark xl, **n. sp.**
- Charops decipiens* var. n. *nigropetiolatus*, STROBL, p. 65, t. c.
- Cidaphurus flavomaculatus*, Simla, CAMERON, p. 346, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Cælichneumon derasus* var. n. *pictus*, ROMAN, p. 115, Ent. Tidskr. xxv.
- Cælojoppa* **n. g.**, p. 163, *C. cariniscutis* **n. sp.**, Darjeeling, p. 208, CAMERON, Entomologist 1904.
- Colpomera flava*, Philippines, ASHMEAD, p. 284, Canad. Ent. xxxvi, **n. sp.**
- Cratichneumon (Melanichneumon) cæsareus*, Siberia, ROMAN, p. 146, Ent. Tidskr. xxv; *C. rubicundus*, p. 106, *davisi*, p. 107, N. America, BRADLEY, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Cremastus dalmatinus*, Dalmatia, STROBL, p. 92, Mt. Ver. Steiermark xl, **n. sp.**
- Cryptus verticalis* Bingh. to *Agrothereutes*, *C. præpes* Bingh. to *Microcryptus*, ASHMEAD, p. 142, P. U. S. Mus. xxviii.
- C. capensis*, Cape Colony, CAMERON, p. 142, Rec. Albany Mus. i; *C. rufopetiolatus*, p. 105, *himalayensis*, *bibulus*, p. 106, Assam, CAMERON, Tr. ent. Soc. London 1904 : **n. spp.**
- Darpasus* **n. g.** *Amblypygi*, *D. pilosus* **n. sp.**, Himalaya, CAMERON, p. 344, Zeitschr. Hym. Dipt. iv.
- Darymna* **n. g.** p. 224, *D. pleuralis* **n. sp.**, Darjeeling, p. 337, CAMERON, t. c.
- Diatora prodeniæ*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Enicospilus*, the North American, FELT, pp. 107-113, Bull. New York Mus. lxxvi; *E. unicallosus* ♀, STROBL, p. 54, Mt. Ver. Steiermark xl.
- E. ashbyi*, Philippines, ASHMEAD, p. 17, J. N. York Ent. Soc. xii, **n. sp.**
- Entypoma rugosissimum*, Styria, STROBL, p. 114, Mt. Ver. Steiermark xl, **n. sp.**
- Ephialtes carbonarius*, metamorphosis, XAMBEU, p. 170, Ann. Soc. Linn. Lyon l.

- E. tschitscherini*, Ural, KOKUJEV, p. 200, Rev. Russe Ent. iv, n. sp.
Epiurus carpocapsæ, St Petersburg, ASHMEAD, p. 102, Canad. Ent. xxxvi, n. sp.
Eremotylus, the North American, FELT, Bull. New York Mus. lxxvi, pp. 101-107.
Eristicus iridipennis, Cape Colony, CAMERON, p. 142, Rec. Albany Mus. i, n. sp.
Etha lacteiventris, khasiana, Assam, CAMERON, p. 103, Tr. ent. Soc. London 1904, n. sp.
Euryproctus albopictus var. n. *alpina*, STROBL, p. 154, Mt. Ver. Steiermark xl.
Eusterinx hirticornis, Admont, STROBL, p. 117, t. c. n. sp.
Exetastes csikii var. n. *signata*, KOKUJEV, p. 108, Rev. Russe Ent. iv.
E. illyricus, Styria, STROBL, p. 45, Mt. Ver. Steiermark xl; *E. (Allexetastes* subg. n.) *komarovi*, p. 106, *coreanus*, p. 107, Corea, KOKUJEV, Rev. Russe Ent. iv : n. spp.
Exochus multicinctus, Admont, STROBL, p. 156, Mt. Ver. Steiermark xl, n. sp.
Fæsula n. g. *F. maculata* n. sp., Himalaya, CAMERON, p. 338, Zeitschr. Hym. Dipt. iv.
Friona varipes, p. 107, *frontella*, p. 108, *curvicarinata*, p. 109, Assam, CAMERON, Tr. ent. Soc. London 1904, n. spp.
Gabunia Kriechb. = (*Nadia* Tosq.), KRIEGER, p. 172, Zeitschr. Hym. Dipt. iv.
Genophion n. g. *gilletti*, p. 123, *coloradensis*, p. 124, n. spp., N. America, FELT, Bull. New York Mus. lxxvi.
Gotra fulvipes, Assam, CAMERON, p. 104, Tr. ent. Soc. London 1904, n. sp.
Habrocryptus grænicheri, Wisconsin, VIERECK, p. 333, Ent. News Philad. xv, n. sp.
Hadrojoppa fumipennis, N. India, CAMERON, p. 278, Ann. Nat. Hist. xiii, n. sp.
Haliphæra flavomaculata, Darjeeling, CAMERON, p. 306, Entomologist 1904, n. sp.
Hedyjoppa n. g. p. 219, *H. aurantacea* n. sp., Darjeeling, p. 220, CAMERON, Zeitschr. Hym. Dipt. iv.
Helictes nigricornis, Admont, STROBL, p. 139, Mt. Ver. Steiermark xl, n. sp.
Hellwigia obscura ♂, STROBL, p. 49, t. c.
Hemiteles geniculatus, p. 110, *pulcherrimus, ornatitarsis*, p. 111, Assam, CAMERON, Tr. ent. Soc. London 1904, n. spp.
Heterischnus hispanicus, Ciudad-Real, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904, n. sp.
Holomeristus minimus, Styria, STROBL, p. 119, Mt. Ver. Steiermark xl, n. sp.
Hoplisis laticinctus, metamorphosis, XAMBEU, p. 172, Ann. Soc. Linn. Lyon l.
Hybophorus piceus, Caucasus, BERTHOUMIEU, p. 13, Echange 1904, n. sp.
Ichneumon haglundii var. n. *guttatus*, *I. thomsoni* var. n. *connectens*, p. 142, *I. gravipes* var. n. *pictus*, *I. melanobatus* var. n. *obscurior*, p. 143, ROMAN, Ent. Tidskr. xxv; *I. amphibolus*, characters, *I. didymus* ♂, ROMAN, p. 116, t. c.; *I. cerebrosus* var. n. *picticornis*, KOKUJEV, p. 82, Rev. Russe Ent. iv.
I. ambifurcus, subcardus, Haute Savoie, *tenuidens*, Croatia, BERTHOUMIEU, Echange 1904; *I. lateritius, reconditus*, Spain, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904; *I. sibiricus*, p. 139, *fuscipictus*, p. 144, Jenissei, ROMAN, Ent. Tidskr. xxv; *I. assimilis*, p. 80, *jakolevi*, p. 81, *versatilis*, p. 82, *areolaris, ermak*, p. 83, Irkutsk, KOKUJEV, Rev. Russe Ent. iv; *I. potanini*, p. 12, *gansuanus*, p. 13, *chinensis*, p. 14, W. China, KOKUJEV, t. c.; *I. rubriornatus*, Cape Colony, CAMERON, p. 141, Rec. Albany Mus. i : n. spp.

- Ischnogaster cabrerai*, Teneriffe, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904, **n. sp.**
- Joppoides n. g. xanthomelas* Tosq., BERTHOUMIEU, p. 23, Gen. Ins. fasc. 18.
- Lægula n. g.* p. 341, *L. annulata n. sp.*, Himalaya, p. 342, CAMERON, Zeitschr. Hym. Dipt. iv.
- Lamprocryptus n. g.* p. 414, SCHMIEDEKNECHT, Opusc. Ent.
- Laphyctes*, synonymy, KRIEGER, pp. 173, 174, Zeitschr. Hym. Dipt. iv.
- Leptobatus ziegleri* ♂, STROBL, p. 47, Mt. Ver. Steiermark xl.
- L. multiguttatus*, Styria, STROBL, p. 48, t. c. **n. sp.**
- Leptopygus stangli*, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc. xii, **n. sp.**
- Limneria africana*, Grahamstown, CAMERON, p. 175, Rec. Albany Mus. i, **n. sp.**
- Lissonota fletcheri* var. *n. breviventris*, STROBL, p. 152, Mt. Ver. Steiermark xl.
- L. curvilineata, africana*, Cape Colony, CAMERON, p. 147, Rec. Albany Mus. i, **n. spp.**
- Lobocryptus n. g.* p. 414, SCHMIEDEKNECHT, Opusc. Ent.
- Lodryca n. g. L. lineaticeps n. sp.*, Darjeeling, CAMERON, p. 223, Zeitschr. Hym. Dipt. iv.
- Lynteria n. g.* p. 220, *L. violaceipennis n. sp.*, Himalaya, p. 221, CAMERON, t. c.
- Marpelites n. g.* near *Listrognathus*, p. 144, *L. ruficollis n. sp.*, Cape Colony, p. 145, CAMERON, Rec. Albany Mus. i.
- Matara* Hlmg. near *Cressonianus*, characters, BRÈTHES, p. 335, An. Mus. Buenos Aires xi.
- Megastylus hirticornis*, Admont, STROBL, p. 141, Mt. Ver. Steiermark xl, **n. sp.**
- Meloboris alpina*, Edmont, STROBL, p. 82, t. c. **n. sp.**
- Mesochorus leucogrammus* var. *n. nigrocoxatus*, STROBL, p. 103, t. c.; *M. confusus*, pl. v, figg. A, B, habits, p. 72, VAN ROSSUM, Tijdschr. Ent. xlvii.
- M. thomsoni* (= *nigriceps* Th. nec Br.), p. 103, *alpigenus*, p. 104, *jugicola*, p. 105, *macrocephalus*, p. 106, *longiceps*, p. 108, Styria, STROBL, Mt. Ver. Steiermark xl; *M. philippinensis*, Manila, ASHMEAD, p. 144, P. U. S. Mus. xxviii : **n. spp.**
- Mesoleius flavipes* ♀, STROBL, p. 153, Mt. Ver. Steiermark xl.
- Mesostenoides octozonatus*, Manila, ASHMEAD, p. 143, P. U. S. Mus. xxviii ; *M. philippinensis*, Manila, ASHMEAD, p. 17, J. N. York Ent. Soc. xii : **n. spp.**
- Mesostenopsis n. g.*, SCHMIEDEKNECHT, p. 561, Opusc. Ent.
- Mesostenus oneili*, Cape Colony, CAMERON, p. 143, Rec. Albany Mus. i ; *M. respondens*, p. 112, *brahminus*, p. 113, *missippus*, p. 114, *clarinervis*, p. 115, *reticulatus*, *caligatus*, p. 116, *salutator*, p. 117, *versatilis*, p. 118, *maculiceps*, p. 119, Assam, CAMERON, Tr. ent. Soc. London 1904 : **n. spp.**
- Metopius erythropus*, Cape Colony, CAMERON, p. 148, Rec. Albany Mus. i, **n. sp.**
- Neomesostenus n. g.*, SCHMIEDEKNECHT, p. 562, Opusc. Ent.
- Neotypus cabrerai*, Teneriffe, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904, **n. sp.**
- Nepiesta jugicola*, p. 75, *rufocincta*, p. 76, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Ogulnia n. g.* near *Haliphera*, *O. fuscitarsis n. sp.*, Darjeeling, CAMERON, p. 343, Zeitschr. Hym. Dipt. iv.
- Ophion abnormum*, Colorado, p. 121, *ferruginipennis*, p. 122, N. America, FELT, Bull. N. York Mus. lxxvi, **n. spp.**

- Olesicampa nigricornis*, Styria, STROBL, p. 81, Mt. Ver. Steiermark xl, n. sp.
- Omorga dispar* ♂, STROBL, p. 79, t. c.
- Oneilella* n. g. for *Cryptus formosus* Br., p. 190, its host *Anaphe reticulata*, p. 191, CAMERON, Zeitschr. Hym. Dipt. iv.
- Opheltes glaucopterus*, habits, VAN ROSSUM, p. 71, Tijdschr. Ent. xlvii.
- Ophion costatus* ♂, STROBL, p. 52, Mt. Ver. Steiermark xl.
- O. frontalis*, Styria, STROBL, p. 53, t. c. n. sp.
- Ophiononeura* n. g. near *Ophionopterus*, p. 174, *O. flavomaculata* n. sp., S. Africa, p. 175, CAMERON, Rec. Albany Mus. i.
- Otacustes alboannulus*, Manila, ASHMEAD, p. 140, P. U. S. Mus. xxviii, n. sp.
- Pantisarthrus pseudochropus*, *rudepunctatus*, Styria, STROBL, p. 137, Mt. Ver. Steiermark xl, n. spp.
- Parabatus nigricarpus* var. n. *semifuscus*, STROBL, p. 50, t. c.
- Paraphylax fasciatipennis*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, n. sp.
- Phaogenes compar*, *tristis*, *tenuicornis*, p. 14, *subniger*, p. 15, Hte. Savoie, BERTHOUMIEU, Echange xx; *P. nigellus*, Spain, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904 : n. spp.
- Phygadeuon latiannullatum*, p. 119, *striatifrons*, p. 120, *labiale*, *pallidinervis*, p. 121, Assain, CAMERON, Tr. ent. Soc. London 1904, n. sp.
- Pimpla diluta* to *Epiurus*, ASHMEAD, p. 102, Canad. Ent. xxxvi.
- P. shawi*, p. 145, *spiloaspis*, p. 146, Cape Colony, CAMERON, Rec. Albany Mus. i, n. spp.
- Platylabus calidus*, Spain, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904; *P. parvulus*, Spain, *pimplarius*, Switzerland, p. 13, *tricolor*, Savoy, p. 14, BERTHOUMIEU, Echange 1904 : n. spp.
- Plectiscus quadrierosus*, p. 125, *tenuecinctus*, p. 126, *grossepunctatus*, p. 127, *pseudoproximus*, p. 128, *posticus*, *petiolifer*, p. 130, Styria, STROBL, Mt. Ver. Steiermark xl, n. spp.
- Porizon erythrusus*, Admont, STROBL, p. 97, t. c. n. sp.
- Pristomerus schreineri*, St. Petersburg, ASHMEAD, p. 101, Canad. Ent. xxxvi; *P. flavus*, Manila, ASHMEAD, p. 145, P. U. S. Mus. xxviii : n. spp.
- Proclitus fulvocingulatus*, Styria, STROBL, p. 134, Mt. Ver. Steiermark xl, n. sp.
- Protocryptus* n. g. p. 414, SCHMIEDEKNECHT, Opusc. Ent.
- Ptyracmon xoridoideus*, p. 72, *aterrimus*, p. 74, Admont, STROBL, Mt. Ver. Steiermark xl, n. spp.
- Rhyssa persuasoria*, eggs, ovaries, see at head.
- Seleucus exareolatus*, Admont, STROBL, p. 109, Mt. Ver. Steiermark xl, n. sp.
- Shalisha* n. g. p. 221, *S. fulvipes* n. sp., Darjeeling, p. 222, CAMERON, Zeitschr. Hym. Dipt. iv.
- Spilocryptus frey-gressneri*, Sierre, p. 526, *subalpinus*, Altvater, p. 528, SCHMIEDEKNECHT, Opusc. Ent., n. spp.
- Spilojoppa* n. g. p. 208, *S. fulvipes* n. sp., Darjiling, p. 209, CAMERON, Entomologist 1904.
- Spilopimpla* n. g. p. 143, *S. rufithorax* n. sp., Dunbrody, p. 144, CAMERON, Zeitschr. Hym. Dipt. iv.
- Spinolia schiefereri*, Styria, STROBL, p. 149, Mt. Ver. Steiermark xl, n. sp.
- Stylocryptus transverseareolatus* var. *nigripes*, STROBL, p. 149, t. c.
- Suvalta annulipes*, p. 220, *pallidinerva*, p. 221, Khasia hills, CAMERON, Ann. Nat. Hist. xiii, n. spp.
- Symplecis defectiva*, Styria, STROBL, p. 112, Mt. Ver. Steiermark xl, n. sp.
- Synechocryptus* n. g. *oraniensis* n. sp., Algeria, SCHMIEDEKNECHT, p. 427, Opusc. Ent.
- Tanyjoppa* n. g. p. 217, *T. sanguineoplagiata* n. sp., Himalaya, p. 218, CAMERON, Zeitschr. Hym. Dipt. iv.

- Temelucha plutellæ*, St. Petersburg, ASHMEAD, p. 101, Canad. Ent. xxxvi ;
T. philippinensis, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc.
 xii : n. spp.
Thascia n. g. *T. pilosa* n. sp., Darjeeling, CAMERON, p. 339, Zeitschr.
 Hym. Dipt. iv.
Thersilochus platyrus, p. 99, *styriacus*, p. 100, Styria, *punctatissimus*, hab. ?,
 p. 102, STROBL, Mt. Ver. Steiermark xl, n. spp.
Thymaris pulchricornis var. n. *breviventris*, STROBL, p. 109, t. c.
T. stingerlandana, N. York from *Polychrosis*, ASHMEAD, p. 333, cut, Canad.
 Ent. xxxvi, and Slingerland, t. c. p. 344.
Trachynotus foliatus var. n. *nigerrimus*, STROBL, p. 55, Mt. Ver. Steier-
 mark xl.
Trichomma clavipes, New Guinea, p. 166, *intermedia*, Saxony, p. 168,
 KRIEGER, Zeitschr. Hym. Dipt. iv, n. spp.
Triptognathus n. g. near *Fileanta* Cam., BERTHOUMIEU, p. 49, Gen. Ins.
 xviii.
Trogus (*Tricyphus*) *violaceus*, Mexico, SZÉPLIGETI, p. 336, Bull. Mus. Paris
 ix, n. sp.
Tropistes, taxonomy and components, ROMAN, pp. 214-217, Zeitschr.
 Hym. Dipt. iv.
Umlina flexilis, Assam, CAMERON, p. 107, Tr. ent. Soc. London 1904,
 n. sp.
Xylonomus sepulchralis and *depressus* to *Sichelia*, KOKUJEV, p. 298, Rev.
 Russe Ent. 1904.

BRACONIDÆ (incl. ALYSIIDÆ).

- [Cf. ASHMEAD (44, 47, 48, 50, 51), BRÈTHES (175, 177), CAMERON (222, 223,
 224, 225, 231, 234), ENDERLEIN (456), FROGGATT (562), GIARD (599),
 HÖPPNER (705), MANTERO (902-904), SZÉPLIGETI (959, 1365-1367).]
 The genera of *Braconidæ*, with lists of species, SZÉPLIGETI, Wytzman's
 Gen. Ins. fasc. xxii and xxiii, 253 pp., 3 pls.
Acanthobracon nigromaculata, Cape Colony, CAMERON, p. 155, Rec. Albany
 Mus. i, n. sp.
Agathis rufoplagiata, Sikkim, CAMERON, p. 5, Zeitschr. Hym. Dipt. iv ;
A. caudata, Peru, SZÉPLIGETI, p. 195, Ann. Mus. Hungar. ii : n. spp.
Apanteles basimacula, *maculitarsis*, Grahamstown, CAMERON, p. 173, Rec.
 Albany Mus. i ; *A. philippinensis*, *manilæ*, Philippines, ASHMEAD,
 p. 19, J. N. York Ent. Soc. xii : n. spp.
Aspilota ceylonica, Peradeniya, ASHMEAD, p. 113, Ent. News Philad. xv,
 n. sp.
Bracon bicolor Br. to *Iphiaulax*, CAMERON, p. 1554, Rec. Albany Mus. i ;
B. tschitscherini, Transcaspian, KOKUJEV, p. 213, Rev. Russe Ent. iv ;
B. teius, Ternate, p. 122, *spilogaster*, hab. ?, p. 123, CAMERON, J. Straits
 Asiat. Soc. xli ; *B. ricinicola*, Manila, ASHMEAD, p. 148, P. U. S. Mus.
 xxviii ; *B. semialbus*, p. 182, *antennalis*, *peruvianus*, *marcapatensis*,
americanus, *bimaculatus*, p. 183, *binotatus*, *enotatus*, *atriceps*, Peru,
paraguayensis, Paraguay, p. 184, *sicuanensis*, *circuminctus*, Peru,
aricensis, Chile, p. 185, SZÉPLIGETI, Ann. Mus. Hungar. ii : n. spp.
Braunsia, revised, definition amended, synonymy, ENDERLEIN, pp. 429-452,
 Zool. Jahrb. Syst. xx.
B. germanica, Pomerania, *fuscipennis*, p. 436, *congoensis*, p. 437, *occidentalis*,
 p. 438, with var. *obscurior*, *reicherti*, p. 439, *erlangeri*, p. 442, *kriegeri*,
 p. 444, *ochracea*, p. 445, *subsulcata*, *melanura*, p. 446, Africa, *kriech-*
baumeri, Lombok, p. 447, *bimaculata*, Java, p. 448, *fasciata*, Lombok,
 p. 449, *cariosa*, Ceylon, p. 450, ENDERLEIN, Zool. Jahrb. Syst. xx,
 n. spp.

- Brulleia* n. g. *melanocephala* n. sp., N. Guinea, SZÉPLIGETI, p. 150, Braconidæ.
- Cardiochiles eremita*, Transcaspian, KOKUJEV, p. 215, Rev. Russe Ent. iv, n. sp.
- Cenocælius peruanus*, Peru, SZÉPLIGETI, p. 196, Ann. Mus. Hungar. ii, n. sp.
- Cervellus* n. n. to replace *Cervulus* below, SZÉPLIGETI, p. 253, Braconidæ.
- Cervulus* n. g. *denticornis* n. sp., Peru, SZÉPLIGETI, p. 20, Braconidæ.
- Chelonus robertianus*, S. Africa, CAMERON, p. 110, Rec. Albany Mus. i ;
C. semihyalinus, Manila, ASHMEAD, p. 146, P. U. S. Mus. xxviii ;
C. sobrinus, Peru, SZÉPLIGETI, p. 194, Ann. Mus. Hungar. ii : n. spp.
- Cremnops collaris*, Manila, ASHMEAD, p. 146, P. U. S. Mus. xxviii, n. sp.
- Curriea fasciatipennis*, Liberia, ASHMEAD, p. 18, cut, Ent. News Philad. xv.
- Cystomastax* n. g. *macrocentroides* n. sp., Peru, SZÉPLIGETI, p. 81, Braconidæ.
- Dacnusa rondanii*, Argenteuil, GIARD, p. 181, Bull. Soc. ent. France 1904, n. sp.
- Ephedrus persicæ*, Australia, FROGGATT, p. 611, Agric. Gaz. N. S. W. xv, n. sp.
- Euagathis pulcher*, Peru, SZÉPLIGETI, p. 195, Ann. Mus. Hungar. ii, n. sp.
- Eurytenes nanus*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii, n. sp.
- Euscelinus manile*, Philippines, ASHMEAD, p. 145, t. c. n. sp.
- Euvipio* n. g. p. 14, *E. rufa* n. sp., W. Africa, p. 15, SZÉPLIGETI, Braconidæ.
- Exothecus tibialis*, Cape Colony, CAMERON, p. 156, Rec. Albany Mus. i ;
E. spilopterus, p. 166, *capensis*, *canaliculatus*, p. 167, S. Africa, CAMERON, t. c. : n. spp.
- Exyra* spp. habits, metamorphosis, JONES, p. 16, pl. iii, Ent. News Philad. xv.
- Fænomorpha* n. g. p. 8, *F. bicolor* n. sp., Peru, p. 9, SZÉPLIGETI, Braconidæ.
- Glyptapanteles manile*, Philippines, ASHMEAD, p. 147, P. U. S. Mus. xxviii, n. sp.
- Iphiaulax trægardi*, White Nile, SZÉPLIGETI, p. 10, Jägerskiöld exp. No. 14 ; *I. capensis*, p. 149, *basimacula*, p. 150, *clanes*, *rubrilineatus*, p. 151, *rubrinervis*, p. 152, *æthiopicus*, p. 153, *odontoscaphus*, 12-fasciatus, p. 154, Cape Colony, CAMERON, Rec. Albany Mus. i ; *I. soleæ*, p. 164, *whitei*, *spilonotus*, p. 165, S. Africa, CAMERON, t. c. ; *I. baeri*, Peru, SZÉPLIGETI, p. 337, Bull. Mus. Paris ix ; *I. tornowii*, Tucuman, BRÈTHES, p. 334, An. Mus. Buenos Aires xi ; *I. transiens*, *rugulosus*, p. 173, *sicuanensis*, *carpalis*, p. 174, *lævigatus*, *ignavus*, p. 175, *apricans*, *peregrinus*, *sculptilis*, *transversalis*, p. 176, *simillimus*, *dubiosus*, Peru, *mercedesiensis*, Argentina, p. 177, *macellus*, *persimilis*, *costatus*, *longulus*, *elegantulus*, Peru, *boliviensis*, Bolivia, p. 178, *luctuosus*, *braconiformis*, p. 179, *braconius*, *pseudobracon*, *paraguayensis*, *latus*, *aptus*, p. 188, *apricans*, *simplex*, Peru, *macretus*, Brazil, p. 181, *pernix*, *agilis*, p. 182, Peru, SZÉPLIGETI, Ann. Mus. Hungar. ii : n. spp.
- Ischiogonus philippinensis*, Manila, ASHMEAD, p. 285, Canad. Ent. xxxvi, n. sp.
- Ischnopus* n. g. *Alysiidæ*, p. 450, *I. bituberculatus* n. sp., Tuscany, p. 451, MARSHALL, Ann. Mus. Genova xli.
- Lisitheria* n. g. *Agathidinae*, *L. nigricornis* n. sp., India, CAMERON, p. 306, Entomologist 1904.
- Macrocentrus philippinensis*, Manila, ASHMEAD, p. 145, P. U. S. Mus. xxviii, n. sp.
- Macrostomion peruvianum*, Peru, SZÉPLIGETI, p. 193, Ann. Mus. Hungar. ii, n. sp.
- Megacentrus* n. g. p. 145, *concolor* n. sp., Kilimanjaro, p. 146, SZÉPLIGETI, Braconidæ.
- Megalommum flavomaculatum*, Cape Colony, CAMERON, p. 157, Rec. Albany Mus. i, n. sp.

- Megaproctus fumipennis, fuscipennis*, p. 191, Peru, *xanthostigma*, Paraguay, *bifasciatus, affinis*, p. 192, *bicolor*, p. 193, Peru, SZÉPLIGETI, Ann. Mus. Hungar. ii, **n. spp.**
- Megarhogas n. g.* p. 83, *longipes, minor n. spp.*, Celebes, p. 84, SZÉPLIGETI, Braconidæ.
- Mesoagathis n. g. M. fuscipennis n. sp.*, Grahamstown, CAMERON, p. 172, Rec. Albany Mus. i.
- Meteorus bacoorensis*, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc. xii; *M. eumenidis*, Argentina, BRÈTHES, p. 53, An. Mus. Buenos Aires (3) ii: **n. spp.**
- Microcentrus n. g. Dyscoletes similis*, SZÉPLIGETI, p. 155, Braconidæ.
- Microdus bipustulatus*, Cape Colony, CAMERON, p. 158, Rec. Albany Mus. i, **n. sp.**
- Microplitis manilæ, philippinensis*, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. spp.**
- Monarea n. g. Osmophila fuscipennis*, SZÉPLIGETI, p. 68, Braconidæ.
- Monolexia manilensis*, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. sp.**
- Neorhyssa partiti*, p. 187, *ruficeps*, p. 188, Brazil, SZÉPLIGETI, Ann. Mus. Hungar. ii, **n. spp.**
- Opius pedestris*, Peru, SZÉPLIGETI, p. 196, t. c.; *O. philippinensis*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii: **n. spp.**
- Phanocarpa (Idioleris) coxalis*, Peru, SZÉPLIGETI, p. 197, Ann. Mus. Hungar. ii, **n. sp.**
- Phanerotoma philippinensis*, Bacoor, ASHMEAD, p. 19, J. N. York Ent. Soc. xii, **n. sp.**
- Pseudobracon n. g.* p. 48, *africanus n. sp.*, Sierra Leone, p. 49, SZÉPLIGETI, Braconidæ.
- Rhogas ruspolii*, p. 413, *citernii*, p. 414, *scioensis*, p. 415, E. Africa, MANTERO, Ann. Mus. Genova xli; *R. fuscipennis, affinis*, Peru, SZÉPLIGETI, p. 194, Ann. Mus. Hungar. ii: **n. spp.**
- Schlettereriella n. g. Stenophasmus oncophorus* Sch., SZÉPLIGETI, p. 54, Braconidæ.
- Schonlandella n. g.* p. 169, position doubtful, *S. nigromaculata*, p. 170, *trinaculata, nigricollis*, p. 171, **n. spp.**, S. Africa, CAMERON, Rec. Albany Mus. i.
- Spathius philippinensis*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii, **n. sp.**
- Stantonina n. g. Microdini*, p. 146, *S. flava n. sp.*, Manila, p. 147, ASHMEAD, t. c.
- Trichiobracon rufus*, p. 168, *maculifrons*, p. 169, S. Africa, CAMERON, Rec. Albany Mus. i, **n. spp.**
- Urogaster philippinensis*, p. 19, *stantoni*, p. 20, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. spp.**
- Vipio (Pseudovipio) turcomanicus*, Transcaspian, p. 213, *xanthostigma*, W. Siberia, p. 214, KOKUJEV, Rev. Russe ent. iv, **n. spp.**
- Westwoodiella n. g. bicolor n. sp.*, W. Australia, SZÉPLIGETI, p. 155, Braconidæ.
- Xanthomicrodus n. g.* near *Crassomicrodus*, p. 157, *X. iridipennis n. sp.*, Cape Colony, p. 158, CAMERON, Rec. Albany Mus. i.

EVANIIDÆ.

[Cf. ASHMEAD (47), CAMERON (224, 240), HÖPPNER (705), KIEFFER (793).]

- Aulacinus costulatus*, Brazil, KIEFFER, p. 561, Arkiv Zool. i, **n. sp.**
- Aulacus erythrogaster*, Nevada, KIEFFER, p. 561, t. c. **n. sp.**
- Evania striatifrons, versicolor*, p. 543, with var. *erythrogaster*, p. 544,

- quinquelineata*, p. 544, *villosicrus*, Australia, *ferruginea*, Mexico, p. 545, *multicolor*, Java, p. 546, *levigena*, Caffraria, p. 547, *longitarsis*, p. 548, *brevigena*, p. 549, Brazil, *incerta*, S. France, p. 550, KIEFFER, t. c.; *E. annulipes*, Manila, ASHMEAD, p. 139, P. U. S. Mus. xxviii : n. spp.
- Gasteruption krieckbaumeri* var. n. *striaticeps*, KIEFFER, p. 551, Arkiv Zool. i; *G. assectator*, natural history, HÖPPNER, pp. 97-103, Allg. Zeitschr. Ent. ix.
- G. cultrigerum*, p. 552, *sanguineum*, *sjostedti*, p. 553, Cape Good Hope, *lativalva*, Australia, p. 554, *fulvivagina*, Caffraria, p. 555, *micrura* with var. *nigripectus*, *intricatum*, N. America, p. 556, *trifossulatum*, Egypt, p. 557, *leucopus*, Java, *nigromaculatum*, hab.?, p. 558, KIEFFER, Arkiv Zool. i; *G. dunbrodyense*, Cape Colony, CAMERON, p. 159, Rec. Albany Mus. i, n. spp.
- Hyptia argenteiceps*, hab.?, p. 540, *brevicalcar*, Wisconsin, p. 541, *rufosignata*, Buenos Ayres, p. 543, KIEFFER, Arkiv Zool. i, n. spp.
- Pristaulacus flavoguttatus*, Australia, CAMERON, p. 191, Zeitschr. Hym. Dipt. iv; *P. flavipes*, Illinois, p. 559, *muticus*, hab.?, p. 560, KIEFFER, Arkiv Zool. i : n. spp.

STEPHANIDÆ.

- Megischus ruficeps*, Saigon, pl. xii, fig. 5, p. 201, *borneensis*, Borneo, p. 202, SAUSSURE, Mission Pavie iii, n. spp.

CHALCIDIDÆ.

[Cf. ASHMEAD (41, 46, 47, 48, 52, 53), CAMERON (223, 230), EMBLETON (450), FYLES (574), HÖPPNER (705), KIEFFER (796), MARCHAL (906, 907), MAYR (928), VASSILIEV (1433).]

ASHMEAD classifies the *Chalcidoidea*, adopting 14 families, tabulating the genera; he also catalogues the S. American forms and describes many new: Mem. Carnegie Mus. i, No. 4, pp. 225-551. For brevity, and as the work will be chiefly used separately, we have cited it below as ASHMEAD, Chalcid.

Bibliography of genera of *Chalcididæ*, ASHMEAD, pp. 365-393, Chalcid.

Anatomy and metamorphosis of *Comys infelix*, eggs, EMBLETON, Tr. Linn. Soc. London (2) ix, pp. 231-254, pls. xi, xii.

Remarkable development of *Ageniaspis fuscicollis*, MARCHAL, Arch. Zool. exp. xxxii, pp. 259-299.

Acanthometopon n. g. type *A. clavicornis* Ashm., ASHMEAD, Chalcid. p. 314, *A. clavicorne*, Brazil, pl. xxxviii, fig. 3, p. 498, id. n. sp.

Acroclisis coccidivora, Japan, ASHMEAD, p. 158, J. N. York Ent. Soc. xii, n. sp.

Acroclisis brasiliensis, Chapada, ASHMEAD, Chalcid. p. 502, n. sp.

Allochalcis n. g. p. 256, *A. nervosa* n. sp., Madagascar, p. 257, KIEFFER, Berlin. ent. Zeitschr. xlix.

Alloderma n. g. type *A. maculipennis*, Ashm., ASHMEAD, Chalcid. p. 273.

Allophomyia n. n. for *Alophus* Ashm., ASHMEAD, p. 126, P. ent. Soc. Washington vi.

Alophus n. g. type *A. flavus* Ashm., ASHMEAD, Chalcid. p. 353, *A. brasiliensis*, Brazil, p. 520, id. n. sp.

Ametallon n. g. type *A. chapadæ* Ashm., ASHMEAD, Chalcid. p. 344, *A. chapadæ*, Brazil, p. 511, id. n. sp.

Anacryptus japonicus, p. 147, *koebelei*, p. 148, Japan, ASHMEAD, J. N. York Ent. Soc. xii, n. sp.

Anastatus japonicus, *gastropachæ*, p. 153, *brevipennis*, *albitarsis*, p. 154,

- Japan, ASHMEAD, J. N. York Ent. Soc. xii, *A. stantoni*, Philippines, ASHMEAD, p. 14, t. c.; *A. auriceps*, p. 493, *coreophagus*, *pleuralis*, *basalis*, *punctiventris*, p. 494, *unifasciatus*, p. 495, Brazil, ASHMEAD, Chalcid. : n. spp.
- Anthrocephalus punctatus*, Madagascar, p. 253, *rufipes*, Nossi-Bé, p. 254, KIEFFER, Berlin. ent. Zeitschr. xlix, n. spp.
- Aphelinus japonicus*, Atami, ASHMEAD, p. 161, J. N. York Ent. Soc. xii, n. sp.
- Aphidencyrus pallidipes*, Philippines, ASHMEAD, p. 15, t. c.; *A. brasiliensis*, Chapada, ASHMEAD, Chalcid. p. 497 : n. spp.
- Aphobetoideus* n. g. type *A. comperei* Ashm., ASHMEAD, Chalcid. p. 328.
- Aphyus albopleuralis*, Japan, ASHMEAD, p. 155, J. N. York Ent. Soc. xii, n. sp.
- Apocryptophagus* n. g. type *Chalcis explorator* Coq., ASHMEAD, Chalcid. p. 238.
- Ardalus howardii*, Brazil, ASHMEAD, Chalcid. p. 517, n. sp.
- Arretocera stantoni*, Manila, ASHMEAD, p. 136, P. U. S. Mus. xxviii, n. sp.
- Ascodes elasmii*, Manila, ASHMEAD, p. 138, t. c. n. sp.
- Aspidiotiphagus aleyrodis*, Manila, ASHMEAD, p. 139, t. c. n. sp.
- Asima koebelei*, *brasiliensis*, *brevicornis*, Brazil, ASHMEAD, Chalcid. p. 459, n. spp.
- Aximogastra* n. g. type *A. bahiæ* Ashm., ASHMEAD, Chalcid. p. 261, *A. bahiæ*, Brazil, p. 463, pl. xxxiii, fig. 5, id. n. sp.
- Aximopsis* n. g., ASHMEAD, Chalcid. p. 259, *A. morio*, pl. xxxii, fig. 6, p. 460, Brazil, ASHMEAD, t. c. n. sp.
- Bephrata striatipes*, Brazil, p. 462, pl. xxxiii, fig. 4, ASHMEAD, t. c. n. sp.
- Blotticida* n. g. type *B. pulchra* Ashm., ASHMEAD, t. c. p. 305.
- Bothriothorax brasiliensis*, Chapada, ASHMEAD, t. c. p. 496, n. sp.
- Brachista* Walk. not valid, MAYR, p. 591, Verh. Ges. Wien liv.
- Brachycaudonia* n. g. type *B. californica* Ashm., ASHMEAD, Chalcid. p. 283.
- Brachystira pungens* (Förster), Germany, MAYR, p. 590, Verh. Ges. Wien liv, n. sp.
- Brasema fuscipennis*, Brazil, ASHMEAD, Chalcid. p. 486, n. sp.
- Bruchobius* n. g. type *B. luticeps* Ashm., ASHMEAD, t. c. p. 314.
- Bruchophagus funebris*, natural history, TITUS, pp. 77-83, Bull. U. S. Dep. Agric. Ent. xlv.
- Callismicra* n. g. p. 247, *C. flavocincta* n. sp., Madagascar, p. 248, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Calosoter albitarsis*, Japan, ASHMEAD, p. 153, J. N. York Ent. Soc. xii, n. sp.
- Cecidoxenus* n. g. type *C. nigrocyaneus* Ashm., ASHMEAD, Chalcid. p. 274.
- Cerapteroceroides* n. g. near *Cerapterocerus*, *C. japonicus* n. sp., Atami, ASHMEAD, p. 156, J. N. York Ent. Soc. xii.
- Ceratismicra* n. g. type *C. petiolata* Ashm., ASHMEAD, Chalcid. p. 251.
- Chalcedectes annulipes*, Brazil, pl. xxxvi, fig. 2, p. 483, ASHMEAD, t. c. n. sp.
- Chalcis flavitarsis*, Madagascar, *tenuicornis*, Nossi-Bé, p. 260, *multicolor*, Madagascar, p. 261, *saussurei*, *rufiventris*, Nossi-Bé, p. 262, *ferox*, p. 263, Nossi-Bé and Bourbon, with var. *coxalis*, p. 264, KIEFFER, Berlin. ent. Zeitschr. xlix; *C. prodenice*, Manila, ASHMEAD, p. 136, P. U. S. Mus. xxviii; *C. albotibialis*, *argentifrons*, Philippines, ASHMEAD, J. N. York Ent. Soc. xii : n. spp.
- Cheiloneurus japonicus*, Gifu, ASHMEAD, p. 156, J. N. York Ent. Soc. xii, n. sp.
- Chryseidu æneiventris*, Brazil, p. 462, pl. xxxiii, fig. 3, ASHMEAD, Chalcid. n. sp.
- Chrysoatomus* n. g. type *C. zealandicus* Ashm., ASHMEAD, t. c. p. 342.
- Chrysonotomyia* n. g. type *Eulophus auropunctatus* Ashm., ASHMEAD, t. c. p. 344.

- Cirrospiloides* n. g. type *Miotropis platynotæ* How., ASHMEAD, t. c. p. 354.
Closterocerus brownii, Manila, ASHMEAD, p. 138, P. U. S. Mus. xxviii, n. sp.
Coccidencyrtus manile, Philippines, ASHMEAD, p. 14, J. N. York Ent. Soc. xii, n. sp.
Celochalcis n. g. near *Halticella*, *C. carinifrons* n. sp., Sikkim, p. 111, CAMERON, Entomologist 1904.
Copidosoma japonicum, Gifu, ASHMEAD, p. 154, J. N. York Ent. Soc. xii, n. sp.
Cryptoprymnus japonicus, Japan, ASHMEAD, p. 159, t. c. n. sp.
Decatoma atamiensis, Japan, ASHMEAD, p. 151, t. c. n. sp.
Decatomothorax n. g. type *D. gallicola* Ashm., ASHMEAD, Chalcid. p. 273.
Derostenus bifoveolatus, *nawai*, p. 160, *mitsukurii*, p. 161, Japan, ASHMEAD, J. N. York Ent. Soc. xii, n. spp.
Diaulomorpha n. g. type *D. australiensis* Ashm., ASHMEAD, Chalcid. p. 356.
Diaulus n. g. type *D. begini* Ashm., ASHMEAD, t. c. p. 356.
Dicælothorax platycerus, Santarem, pl. xxxv, fig. 3, p. 470, ASHMEAD, t. c. n. sp.
Diglyphomorpha n. g. type *Diglyphus maculipennis* Ashm., ASHMEAD, t. c. p. 352.
Dimmockia n. g. type *Eulophus incongruus* Ashm., ASHMEAD, t. c. p. 357.
Eisenia n. g. type *E. mexicana* Ashm., ASHMEAD, t. c. p. 233.
E. flaviscapa, Parà, ASHMEAD, t. c. p. 394, n. sp.
Elachertomorpha n. g. type *E. flaviceps* Ashm., ASHMEAD, t. c. p. 352.
E. flaviceps, Brazil, p. 518, ASHMEAD, t. c. n. sp.
Elachertus atamiensis, *basilaris*, Japan, ASHMEAD, p. 164, J. N. York Ent. Soc. xii, n. spp.
Elasmus atamiensis, *hakonensis*, p. 159, *japonicus*, p. 160, Japan, ASHMEAD, t. c.; *E. philippinensis*, Manila, ASHMEAD, p. 138, P. U. S. Mus. xxviii; *E. brasiliensis*, p. 502, *peruffinis*, *chapadæ*, p. 503, Brazil, ASHMEAD, Chalcid. : n. spp.
Encyrtaspis n. g. type *E. brasiliensis* Ashm., ASHMEAD, Chalcid. p. 290, *E. braziliensis*, Pernambuco, pl. xxxvii, fig. 4, p. 492, id. n. sp.
Encyrtus telenomicida, Charkov, on *Telenomus*, VASSILIEV, p. 117, Rev. Russe Ent. iv, n. sp.
Enneasmicra n. g. type *Smicra exinamius* Walk., ASHMEAD, Chalcid. p. 252, *E. incerta*, Brazil, ASHMEAD, p. 449, t. c. n. sp.
Epipteromalus n. g. type *E. algonquinensis* Ashm., ASHMEAD, t. c. p. 319.
Eufroggattia n. n. for *Froggattia* Ashm., ASHMEAD, p. 126, P. ent. Soc. Washington vi.
Eukoebelia n. n. for *Kæbelea* Ashm., ASHMEAD, p. 126, t. c.
Eulophopteryx n. g. type *E. chapadæ* Ashm., ASHMEAD, Chalcid. p. 341, *E. chapadæ*, Brazil, pl. xxxviii, fig. 6, p. 506, id. n. sp.
Eulophus exiguus Nees to *Asynacta*, MAYR, p. 589, Verh. Ges. Wien liv.
E. albitarsis, p. 164, *striatipes*, *japonicus*, p. 165, Japan, ASHMEAD, J. N. York Ent. Soc. xii, n. spp.
Euophthalmomyia n. g. type *E. pallidipes* Ashm., ASHMEAD, Chalcid. p. 339.
Eupelmus formosæ, Formosa, ASHMEAD, p. 154, J. N. York Ent. Soc. xii; *E. koebeli*, *acaudus*, *proximus*, p. 488, *compressiventris*, *aprilis*, *chapadæ*, *santaremensis*, *persimilis*, p. 489, *corumbæ*, *unifasciatus*, *simillimus*, *magniclavatus*, p. 490, Brazil, ASHMEAD, Chalcid. : n. spp.
Euplectrus manilæ, *philippinensis*, Philippines, ASHMEAD, p. 16, J. N. York Ent. Soc. xii, *E. japonicus*, *nigromaculatus*, Japan, ASHMEAD, p. 163, t. c.; *E. brasiliensis*, p. 516, *corumbæ*, *solitarius*, *chapadæ*, p. 517, Brazil, ASHMEAD, Chalcid. : n. spp.
Euryophrys Först. = (*Calypso* Hal.), ASHMEAD, p. 126, P. ent. Soc. Washington vi.

- Eurytoma rubicola*, natural history, HÖPPNER, pp. 161-171, Allg. Zeitschr. Ent. ix.
- E. infracta*, Dalmatia, p. 580, *timaspidis*, Montpellier, p. 582, MAYR, Verh. Ges. Wien liv; *E. nikkoensis*, *atamiensis*, p. 149, *japonica*, *binotata*, *hakonensis*, *mitsukurii*, p. 150, Japan, ASHMEAD, J. N. York Ent. Soc. xii, *E. manilensis*, Philippines, ASHMEAD, p. 13, t. c. : n. spp.
- Eusayia* n. n. for *Sayiella* Ashm., ASHMEAD, p. 126, P. ent. Soc. Wash- ington vi.
- Eustypura* n. g. type *E. bicolor* Ashm., ASHMEAD, Chalcid. p. 251, *E. bicolor*, pl. xxxi, fig. 4, *sexmaculata*, fig. 5, p. 412, *smithii*, p. 413, Brazil, ASHMEAD, t. c. n. spp.
- Exoristobia* n. g. *Encyrtidæ*, *E. philippinensis* n. sp., Manila, ASHMEAD, p. 15, J. N. York Ent. Soc. xii.
- Froggattia* n. g. type *F. polita* Ashm., ASHMEAD, Chalcid. p. 238.
- Haltichella ludlowæ*, Philippines, ASHMEAD, p. 13, J. N. York Ent. Soc. xii, n. sp.
- Halticoptera laticeps*, Japan, ASHMEAD, p. 152, t. c. n. sp.
- Hemitorymus* n. g. type *H. thoracicus* Ashm., ASHMEAD, Chalcid. p. 243; *H. thoracicus*, Chapada, p. 401, id. t. c. n. sp.
- Heptasmicra* n. g. type *Smicra oblitterata* Walk., ASHMEAD, Chalcid. p. 252; *H. persimilis*, *affinis*, *longicaudata*, *lineaticoxus*, p. 452, *quadrimacu- lata*, p. 453, Brazil, id. t. c. n. spp.
- Herbertia howardi*, pl. xxxv, fig. 6, *brasiliensis*, Brazil, p. 474, ASHMEAD, Chalcid. n. spp.
- Hexasmicra* n. g. type *Smicra transversa* Walk., ASHMEAD, Chalcid. p. 252; *H. trinidadensis*, *brasiliensis*, Brazil, id. p. 454, t. c. n. spp.
- Holcopeltoideus* n. g. type *H. petiolata* Ashm., ASHMEAD, Chalcid. p. 341.
- Holochalcis* n. g. *H. madagascariensis*, p. 258, Madagascar, *albipes*, p. 259, Nossi-Bé, n. spp., KIEFFER, Berlin. ent. Zeitschr. xlix.
- Homoporus japonicus*, Atami, ASHMEAD, p. 157, J. N. York Ent. Soc. xii, n. sp.
- Hontalia cameroni*, pl. xxxii, fig. 4, *kirbyi*, fig. 5, Santarem, ASHMEAD, Chalcid. p. 458, n. spp.
- Hoplocrepis bifasciata*, pl. xxxviii, fig. 5, *brasiliensis*, Brazil, p. 505, ASHMEAD, t. c. n. spp.
- Horismenus bisulcus*, *brasiliensis*, p. 507, *corumbæ*, *persimilis*, *æneicollis*, p. 508, Brazil, ASHMEAD, t. c. n. spp.
- Hubbardiella* n. g. type *H. arizonensis* Ashm., ASHMEAD, Chalcid. p. 339.
- Hydrorhoa* n. g. *Eucharinæ*, p. 240, *H. striaticeps* n. sp., Madagascar, p. 241, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Hypopteromalus* n. g. type *P. tabacum* Fitch, ASHMEAD, Chalcid. p. 320.
- Ischnopsis thoracica*, *cyanea*, Brazil, ASHMEAD, t. c. p. 487, n. sp.
- Isosmodes brasiliensis*, pl. xxxiii, fig. 1, p. 460, *nigriceps*, p. 461, fig. 2, Santarem, ASHMEAD, t. c. n. spp.
- Kapala furcata*, ♀ described, KIEFFER, p. 243, Berlin. ent. Zeitschr. xlix.
- K. splendens*, Brazil, pl. xxxv, fig. 4, p. 473, ASHMEAD, Chalcid. n. sp.
- Koebelea* n. g. type *K. australiensis* Ashm., ASHMEAD, t. c. p. 238. [Cf. *Eukoebelea* below.]
- Kradibia brownii*, Philippines, ASHMEAD, p. 342, Ent. News Philad. xv, n. sp.
- Lasiokapala serrata*, Brazil, pl. xxxv, fig. 5, p. 474, ASHMEAD, Chalcid. n. sp.
- Lathromeris*, parasitising egg of *Chrysopa*, KRYGER, Ent. Meddel. ii. p. 340.
- Lelaps apicalis*, p. 479, *affinis*, *ferruginea*, p. 480, *æneiceps*, *halidayi*, *abdo- minalis*, pl. xxxvi, fig. 1, p. 481, *bimaculata*, *stylata*, p. 482, Brazil, ASHMEAD, Chalcid. n. spp.
- Leptochalcis* n. g., p. 251, *L. filicornis* n. sp., Madagascar, p. 252, KIEFFER, Berlin. ent. Zeitschr. xlix.

- Leucodesmia flaviceps*, Brazil, ASHMEAD, Chalcid. p. 518, n. sp.
Leucospis japonica ♂, ASHMEAD, p. 147, J. N. York Ent. Soc. xii.
L. enderleini, Santarem, ASHMEAD, Chalcid. p. 405, pl. xxxi, fig. 1, n. sp.
Lophocoomus cyaneus, Brazil, ASHMEAD, t. c. p. 506, n. sp.
Macrorileya n. g. type *R. acanthi* Ashm., ASHMEAD, t. c. p. 264.
Megastigmus japonicus, koebelei, Japan, ASHMEAD, p. 146, J. N. York Ent. Soc. xii, n. spp.
Melanosmicra n. g. type *M. immaculata* Ashm., ASHMEAD, Chalcid. p. 251, *M. immaculata*, Chapada, p. 448, n. sp.
Mesidia pumila, Aachen, MAYR, p. 588, Verh. Ges. Wien liv, n. sp.
Metadontia flavolineata, similis, p. 453, *affinis*, p. 454, Brazil, ASHMEAD, Chalcid. n. spp.
Metopon brasiliense, p. 497, *magniclavatum*, p. 498, Brazil, ASHMEAD, t. c. n. spp.
Microchalcis n. g. p. 255, *M. quadridens* n. sp., Bitsch, p. 256, KIEFFER, Berlin. ent. Zeitschr. xlix.
Microterys japonicus, Gifu, ASHMEAD, p. 155, J. N. York Ent. Soc. xii, n. sp.
Mirocerus n. g. type *M. pygæ* Ashm., ASHMEAD, Chalcid. p. 309.
Mischosmicra n. g. type *M. kahlii* Ashm., ASHMEAD, t. c. p. 251.
Monodontomerus japonicus, Nikko, ASHMEAD, p. 83, J. N. York Ent. Soc. xii, n. sp.
Mormoniella n. g. type *M. brevicornis* Ashm., ASHMEAD, Chalcid. p. 316.
Nasonia n. g. type *N. brevicornis* Ashm., ASHMEAD, t. c. p. 317.
Neocatolaccus n. g. type *Cat. tylodermæ* Ashm., ASHMEAD, t. c. p. 320.
Neorileya n. g. type *N. flavipes* Ashm., ASHMEAD, t. c. p. 264; *N. flavipes*, Brazil, p. 466, pl. xxxvi, fig. 2, id. t. c. n. sp.
Nesomyia n. g. type *N. albipes* Ashm., ASHMEAD, t. c. p. 344; *N. albipes, cinctiventris*, Japan, ASHMEAD, p. 161, J. N. York Ent. Soc. xii, n. spp.
Notanisomorpha n. g. type *N. collaris* Ashm., ASHMEAD, Chalcid. p. 356.
Octosmicra n. g. type *O. laticeps* Ashm., ASHMEAD, t. c. p. 252; *O. nigro-maculata*, p. 450, *trimaculata*, p. 451, Brazil, id. t. c. n. spp.
Omphale brasiliensis, Chapada, ASHMEAD, t. c. p. 504, n. sp.
Oncochalcis n. g. p. 161, *O. marginata* n. sp., India, p. 162, CAMERON, Entomologist 1904.
Ophelinoideus japonicus, Hakone, p. 163, pl. viii, fig. 4, ASHMEAD, J. N. York Ent. Soc. xii, n. sp.
Ormyrus, revision of European, with host-galls, variation etc., MAYR, pp. 559-580, Verh. Ges. Wien liv.
O. destefanii, Sicily, p. 566, *wachlii*, Dalmatia, p. 569, MAYR, t. c.; *O. brasiliensis*, Chapada, ASHMEAD, Chalcid. p. 401 : n. spp.
Orthochalcis n. g. for *Euchalcis fertoni*, KIEFFER, p. 265, Berlin. ent. Zeitschr. xlix.
Oxyoryphus n. g. near *Stomatocerus*, p. 109, *O. pilosellus* n. sp., Deesa, p. 110, CAMERON, Entomologist 1904.
Pachyneura nawai, mitsukurii, gifuensis, Japan, ASHMEAD, 158, J. N. York Ent. Soc. xii, n. spp.
Pachycrepoides n. g. type *P. dubius* Ashm., ASHMEAD, Chalcid. p. 329.
Paracrias n. g. type *P. laticeps* Ashm., ASHMEAD, t. c. p. 343; *P. laticeps*, Brazil, pl. xxxix, fig. 1, p. 510, id. n. sp.
Parapteromalus n. g. type *P. isosomatis* Ashm., ASHMEAD, t. c. p. 320.
Parasaphes n. g. type *P. iceryæ* Ashm., ASHMEAD, t. c. p. 328.
P. japonicus, flavipes, Japan, ASHMEAD, p. 157, J. N. York Ent. Soc. xii, n. spp.
Paraspatangia n. g. type *P. annulipes* Ashm., ASHMEAD, Chalcid. p. 334.
Paraterobia n. g. type *P. nigriceps* Ashm., ASHMEAD, t. c. p. 274.
Peloretelus n. g. type *P. cæruleus* Ashm., ASHMEAD, t. c. p. 341; *P. cæruleus*, Brazil, p. 509, id. n. sp.

- Pentarthron brasiliensis*, Bahia, ASHMEAD, t. c. p. 521, n. sp.
Pestasmicra n. g. type *P. brasiliensis* Ashm., ASHMEAD, t. c. p. 252.
Perilampus japonicus, Sapporo, ASHMEAD, p. 151, J. N. York Ent. Soc. xii;
P. brasiliensis, Chapada, pl. xxxiv, fig. 4, p. 467, ASHMEAD, t. c. :
n. spp.
Pheidolo xenus n. g. type *P. wheeleri* Ashm., ASHMEAD, t. c. p. 328.
Phlebopones abdominalis, *pertyi*, pl. xxxvii, fig. 3, Brazil, ASHMEAD, t. c.
p. 492, n. spp.
Platyterma atamiense, Japan, ASHMEAD, p. 156, J. N. York Ent. Soc. xii,
n. sp.
Plesioctenodes n. g. type *P. brasiliensis*, Ashm., ASHMEAD, Chalcid. p. 243;
P. brasiliensis, Corumba, p. 400, id. t. c. n. sp.
Pleurotropis atamiensis, Japan, ASHMEAD, p. 160, J. N. York Ent. Soc. xii,
n. sp.
Plutothrix forsteri, Aachen, MAYR, p. 586, Verh. Ges. Wien liv, n. sp.
Podagrion quinquedentatus, Japan, ASHMEAD, p. 84, J. N. York Ent.
Soc. xii; *P. cyaneus*, Santarem, ASHMEAD, Chalcid. p. 402, n. spp.
Polistomorpha nigromaculata, Panama, CAMERON, p. 96, Tr. Amer. ent.
Soc. xxx, n. sp.
Polynema brasiliensis, *rufescens*, Brazil, ASHMEAD, Chalcid. p. 521, n. spp.
Prodecatoma n. g. type *P. flavescens* Ashm., ASHMEAD, t. c. p. 261; *P.*
brunneiventris, p. 463, *flavescens*, pl. xxxiii, fig. 6, *thoracica*, *nigra*,
p. 464, Brazil, id. t. c. : n. spp.
Prospaltella n. n. for *Prospalta* How. 1894, ASHMEAD, p. 126, P. ent. Soc.
Washington vi.
Pseudochalcis conica, *flavopicta*, Brazil, ASHMEAD, Chalcid. p. 407, n. sp.
Pseudochalcura nigrocyanea, Brazil, pl. xxxiv, fig. 6, p. 468, ASHMEAD, t. c. ;
P. chilensis, Chile, KIEFFER, p. 242, Berlin. ent. Zeitschr. xlix : n. spp.
Psilochalcis n. g. p. 250, *P. longigena* n. sp., Madagascar, p. 251, KIEFFER,
t. c.
Psychophagus n. g. for *Diglochis* Thoms. nec Först., MAYR, p. 598, Verh.
Ges. Wien liv.
Rileya orbitalis, Santarem, ASHMEAD, p. 467, Chalcid. n. sp.
Sapiella n. g. type *Smicra debilis* Say, ASHMEAD, t. c. p. 251.
Schizaspidia tenuicornis, Japan, ASHMEAD, p. 151, J. N. York Ent. Soc.
xii, n. sp.
Schwarzella n. g. type *S. arizonensis* Ashm., ASHMEAD, Chalcid. p. 256.
Scotolinx n. g. type *S. gallicola* Ashm., ASHMEAD, t. c. p. 354.
Scymnophagus n. g. type *S. townsendi* Ashm., ASHMEAD, t. c. p. 319.
Spalangia brasiliensis, Brazil, ASHMEAD, t. c. p. 502, n. sp.
Spathopus n. g. type *S. anomalipes* Ashm., ASHMEAD, t. c. p. 272.
Spilochalcis andrei n. n. for *flavescens* André, ASHMEAD, t. c. p. 418.
Spilochalcis: the following n. spp. are described by ASHMEAD, t. c. : *S.*
tarsalis, *atrata*, *santaremensis*, p. 428, *rufodorsalis*, *laticeps*, *nigro-*
petiolata, *rufoscutellaris*, p. 429, *flavobasalis*, *janeiroensis*, *flavoorbitalis*,
p. 430, *persimilis*, *unimaculata*, *perplexa*, p. 431, *imitator*, *simillima*,
chapadæ, *albomaculata*, p. 432, *santarema*, *erythrogaster*, *flavoaxillaris*,
p. 433, *marginata*, *tuberculata*, *bidentata*, p. 434, *maculata*, *hempeli-*
devia, p. 435, *nigropleuralis*, *corumbicola*, p. 436, *mulleri*, *howardi*,
insularis, *trinidadensis*, p. 437, *incongrua*, *mayri*, *timida*, p. 438, *bian-*
nulata, *medius*, *cameroni*, *enocki*, p. 439, *fusiformis*, *urichi*, *axillaris*,
p. 440, *trilineata*, *marshalli*, *morleyi*, p. 441, *apicalis*, *unilineata*,
lineocoxalis, *fulleri*, p. 442, *corumbensis*, *chapadæ*, *brancensis*, p. 443,
vagabunda, *lanceolata*, *var.*, *incompleta*, p. 444, *persimilis*, *hollandi*,
corumbæ, p. 445, *paraguayensis*, *dimidiata*, *meridionalis*, *tripunctata*,
p. 446, *bipunctata*, p. 447, S. America, ASHMEAD, t. c. n. spp.
Stenomesomeiidea n. g. type *S. mellea* Ashm., ASHMEAD, t. c. p. 355.
Stenomesomeius dimidiatus, Brazil, pl. xxxix, fig. 3, p. 519, ASHMEAD, t. c. n. sp.

- Stibula nigriceps*, Santarem, ASHMEAD, pl. xxxv, fig. 2, p. 468, t. c. n. sp.
Stigmatocrepis n. g. type *S. americana* Ashm., ASHMEAD, t. c. p. 273.
Stomatoceras hakonensis, clavicornis, Japan, ASHMEAD, p. 148, J. N. York Ent. Soc. xii, n. spp.
Stylophorella n. g. type *S. perplexa* Ashm., ASHMEAD, Chalcid. p. 275.
Sycoryctes philippinensis, Philippines, ASHMEAD, p. 342, Ent. News Philad. xv, n. sp.
Sycoscapterella n. g. type *Sycoscapter anguliceps* W., ASHMEAD, Chalcid. p. 239.
Sycoscapteridea n. g. type *Sycoscapter monilifer*, ASHMEAD, t. c. p. 239.
Sympiesis mikado, Japan, ASHMEAD, p. 164, J. N. York Ent. Soc. xii, n. sp.
Sympiesomorpha n. g. type *S. brasiliensis* Ashm., ASHMEAD, Chalcid. p. 352; *S. brasiliensis, obscura*, Brazil, p. 519, ASHMEAD, t. c. n. spp.; *S. japonica*, Gifu, ASHMEAD, p. 163, J. N. York Ent. Soc. xii; n. spp.
Syntomaspis aprilis, holcaspidea, p. 397, *flavicollis* p. 398, Brazil, ASHMEAD, t. c. n. spp.
Syrphophagus nigrocyanus, Japan, ASHMEAD, p. 155, t. c. n. sp.
Systolodes brasiliensis, Chapada, ASHMEAD, p. 466, Chalcid. n. sp.
Tachardiophagus n. g. type *T. thoracicus* Ashm., ASHMEAD, t. c. p. 303.
Tachinæphagus n. g. type *T. zealandicus* Ashm., ASHMEAD, t. c. p. 304; *T. fuscipennis*, Japan, ASHMEAD, p. 155, J. N. York Ent. Soc. xii; n. sp.
Taftia n. g. *Ectromini*, *T. prodeniæ* n. sp., Manila, ASHMEAD, p. 137, P. U. S. Mus. xxviii.
Tetranemopteryx n. g. type *Sycoscapter 4-setosa* Westw., ASHMEAD, Chalcid. p. 239.
Tetrasmicra n. g. type *Smicra concitata* Walk., ASHMEAD, t. c. p. 252.
Tetrastichodes pallidipes, Japan, ASHMEAD, p. 162, J. N. York Ent. Soc. xii, n. sp.
Tetrastichus philippinensis, Philippines, ASHMEAD, p. 15, t. c.; *T. hakonensis, ataniensis, tricolor*, Japan, ASHMEAD, p. 162, t. c.; *T. albatarsis, chapadæ, brasiliensis*, pl. xxxix, fig. 2, p. 515, *incongruus*, p. 516, Brazil, ASHMEAD, Chalcid. : n. spp.
Thaunapus acuminatus, Santarem, ASHMEAD, p. 448, t. c. n. sp.
Thaumatella pulchripennis, Brazil, ASHMEAD, t. c. p. 406, pl. xxxi, fig. 2, n. sp.
Torymus mesembryanthemi, S. Africa, CAMERON, p. 109, Rec. Albany Mus. i; *T. japonicus, sapporoensis*, p. 82, *gifuensis*, p. 83, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *T. thomsoni*, Quebec, FYLES, p. 106, Canad. Ent. xxxvi; *T. wickhami*, Utah, ASHMEAD, p. 302, Ent. News Philad. xv; *T. chapadæ, smithi*, p. 398, *sylvicola*, p. 399, Brazil, ASHMEAD, Chalcid. : n. spp.
Trichencyrtus n. g. type *T. chapadæ* Ashm., ASHMEAD, p. 291, t. c.; *T. robustus*, Brazil, pl. xxxvii, fig. 5, p. 495, id. n. sp.
Trichochalcis n. g. p. 254, *T. inermis* n. sp., Madagascar, p. 255, KIEFFER, Berlin. ent. Zeitschr. xlix.
Trichogramma japonicum, Gifu, ASHMEAD, p. 165, J. N. York Ent. Soc. xii, n. sp.
Trichoporus melleus, viridicyaneus, persimilis, Brazil, ASHMEAD, Chalcid. p. 512, n. spp.
Tridymus hakonensis, Japan, ASHMEAD, p. 152, J. N. York Ent. Soc. xii, n. sp.
Trigonoderus brasiliensis, Chapada, pl. xxxvi, fig. 4, p. 485, ASHMEAD, Chalcid. n. sp.
Trigonogastra n. g. type *T. aurata* Ashm., ASHMEAD, t. c. p. 330; *T. hakonensis*, Japan, ASHMEAD, p. 158, J. N. York Ent. Soc. xii, n. sp.
Trigonura dorsalis, Santarem, ASHMEAD, t. c. p. 406, n. sp.
Trismicra n. g. type *Smicra contracta* Walk., ASHMEAD, t. c. p. 252.

- Tropidogastra* n. g. type *T. arizonensis* Ashm., ASHMEAD, t. c. p. 323.
Uroderostenus n. g. type *U. pleuralis* Ashm., ASHMEAD, t. c. p. 343.
Urocentedon n. g. type *U. verticellata* Ashm., ASHMEAD, Chalcid. p. 341 ;
U. verticellatus, Brazil, pl. xxxviii, fig. 4, p. 505, id. n. sp.
Westwoodella n. g. type *Oligosita subfasciata* Westw., ASHMEAD, t. c. p. 359.
Xanthoatomus n. g., ASHMEAD, t. c. p. 360.
Xanthomelanus n. g. type *Chalcis dimidiata* Fab., ASHMEAD, Chalcid. p. 251.
Xenocrepis pura, Aachen, MAYR, p. 584, Ver. Ges. Wien liv, n. sp.
Zagrammosoma n. g. type *Hippo. multilineata* Ashm., ASHMEAD, t. c. p. 354.
Zaischnopsis, n. n. for *Ischnopsis* Ashm., ASHMEAD, p. 126, P. ent. Soc. Washington vi.
Zaomomyia n. g. type *Chrysocharis stigmata* Ashm., ASHMEAD, Chalcid. p. 340.

PROCTOTRYPIDÆ (incl. BETHYLIDÆ).

- [Cf. ASHMEAD (44, 46, 47, 48), BRUES (190), CAMERON (224, 231), KIEFFER (793, 794, 798), KIEFFER & MARSHALL (799), MARCHAL (906), MAYR (928), WASSILIEFF (1489).]
 The introductory matter of KIEFFER & MARSHALL, *Proctotrypidæ* of Europe and Algeria, is published (799).
 Remarkable development of *Polygnotus minutus*, MARCHAL, Arch. Zool. exp. xxxii, pp. 300-315.
Allotropa japonica, Japan, ASHMEAD, p. 74, J. N. York Ent. Soc. xii, n. spp.
Amblyaspis japonica, Japan, ASHMEAD, p. 74, t. c. n. sp.
Anommatium ashmeadi, Aachen, MAYR, p. 592, Verh. Ges. Wien liv, n. sp.
Anopedias japonicus, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, n. sp.
Apenesia nigra, W. Africa, p. 364, *substriata*, Bolivia, p. 365, *punctata*, *unicolor*, W. Africa, p. 366, *proxima*, New Guinea, p. 367, *levis*, W. Africa, p. 368, KIEFFER, Ann. Mus. Genova xli, n. spp.
Aphanognmus hakonensis, Japan, ASHMEAD, p. 71, J. N. York Ent. Soc. xii, n. sp.
Bocchus atriceps, New York, BRUES, p. 118, Canad. Ent. xxxvi, n. sp.
Ceraphron manila, Philippines, ASHMEAD, p. 135, P. U. S. Mus. xxviii, n. sp.
Dendrocerus, characters, correction, ASHMEAD, p. 71, J. N. York Ent. Soc. xii.
D. ratzeburgi, Japan, ASHMEAD, p. 70, pl. vii, fig. 1, t. c. n. sp.
Diapria mitsukurii, Japan, ASHMEAD, p. 69, t. c. n. sp.
Discleroderma tuberculatum, description, KIEFFER, p. 372, Ann. Mus. Genova xli.
Dissolcus japonicus, *flavipes*, Japan, ASHMEAD, p. 73, J. N. York Ent. Soc. xii, n. spp.
Dissomphalus tibialis, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii ; *D. brevinervis*, Sumatra, KIEFFER, p. 371, Ann. Mus. Genova xli : n. spp.
Dryinus stantoni, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii ; *D. nigrellus*, Long Island, BRUES, p. 117, Canad. Ent. xxxvi ; *D. brachycerus*, Argentina, p. 351, *niger*, Italy, p. 352, KIEFFER, Ann. Mus. Genova xli : n. spp.
Ecitopria proxima, Sardinia, *fusca*, Sumatra, KIEFFER, p. 378, t. c. n. spp.
Epyris bipartitus var. n. *sublevis*, KIEFFER, p. 407, t. c.

- E. foveatus*, Italy, p. 396, *interruptus*, New Guinea, p. 398, *armatitarsis*, Tunis, p. 399, *spiniscapus*, Erythrea, p. 400, *spinitaris*, *breviscapus*, p. 402, *gracilipennis*, p. 403, *pilosipes*, p. 404, W. Africa, *striatus*, Burma, *geniculatus*, Erythrea, p. 406, *feai*, Bombay, p. 408, *tridentatus*, Guinea, p. 409, KIEFFER, t. c.; *E. albopilosus*, Darjiling, CAMERON, p. 307, Entomologist 1904; *E. atamensis*, Japan, ASHMEAD, p. 67, J. N. York Ent. Soc. xii; *E. flaviventris*, p. 526, *reticulatus*, p. 527, Texas, KIEFFER, Arkiv Zool. i : n. spp.
- Eupsenella herbsti*, Concepcion, KIEFFER, p. 142, Revist. chilena viii, n. sp.
- Gonatopus sjostedti*, Texas, KIEFFER, p. 525, Arkiv Zool. i; *G. cilipes*, Paraguay, *planiceps*, Tuscany, p. 355, *breviforceps*, Patagonia, p. 356, *longicornis*, Bolivia, p. 357, *albesignatus*, Tuscany, *unilineatus*, Sardinia, p. 358, *bilineatus*, p. 359, *bifasciatus*, p. 360, *camelinus*, p. 361, *gracilicornis*, p. 361, *dentatiforceps*, p. 362, Tuscany, KIEFFER, Ann. Mus. Genova xli : n. spp.
- Goniozus philippinensis*, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii; *G. japonicus*, Gifu, ASHMEAD, p. 67, J. N. York Ent. Soc. xii; *G. longiceps*, Texas, KIEFFER, p. 529, Arkiv Zool. i; *G. brevicornis*, Nicaragua, KIEFFER, p. 382, Ann. Mus. Genova xli : n. spp.
- Hadronotus carinatifrons*, habits, GIRAULT, p. 337, Ent. News Philad. xv.
- H. philippinensis*, Manila, ASHMEAD, p. 11, J. N. York Ent. Soc. xii; *H. japonicus*, *hakonensis*, Japan, ASHMEAD, p. 74, t. c. : n. spp.
- Holepyris africanus*, Erythrea, p. 391, *bidentatus*, Sardinia, p. 392, *pedestris*, p. 393, *dubius*, Tuscany, *hyalinipennis*, Sardinia, p. 394, KIEFFER, Ann. Mus. Genova xli, n. spp.
- Homoglenus tripartitus*, Guinea, KIEFFER, p. 388, t. c. n. sp.
- Hoplogryon sulcatum*, Texas, KIEFFER, p. 538, Arkiv Zool. i, n. sp.
- Hoploteleia rufidorsum*, Rio-Janciro, KIEFFER, p. 533, t. c. n. sp.
- Lapitha nigriceps*, Brazil, KIEFFER, p. 537, t. c. n. sp.
- Lygocerus japonicus*, *koebelei*, Japan, ASHMEAD, p. 70, J. N. York Ent. Soc. xii, n. spp.
- Macrohynnis lepidus*, Aachen, MAYR, p. 593, Verh. Ges. Wien liv, n. sp.
- Macroteleia punctata*, Texas, KIEFFER, p. 532, Arkiv Zool. i, n. sp.
- Miota hakonensis*, Japan, ASHMEAD, p. 68, J. N. York Ent. Soc. xii, n. sp.
- Mystrocnemis africana*, Guinea, KIEFFER, p. 363, Ann. Mus. Genova xli, n. sp.
- Odontepyrus flavinervis*, Sumatra, KIEFFER, p. 378, t. c. n. sp.
- Oxyblabius bifoveolatus*, New Jersey, BRUES, p. 119, Canad. Ent. xxxvi, n. sp.
- Parascleroderma nigriceps*, Tuscany, KIEFFER, p. 376, Ann. Mus. Genova xli, n. sp.
- Parasierola gestroi*, Sardinia, p. 380, *flavicoxis*, p. 381, *nigricoxis*, p. 382, Nicaragua, KIEFFER, t. c. n. spp.
- Pentacantha longicornis*, Texas, KIEFFER, p. 536, Arkiv Zool. i, n. sp.
- Perisemus fulvicornis*, supplemental note, NIELSEN, Ent. Meddel. ii, p. 333.
- P. coniceps*, p. 384, *dubius*, *mandibularis*, p. 385, *gestroi*, p. 386, Italy, KIEFFER, Ann. Mus. Genova xli, n. spp.
- Polygnotus gifuensis*, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, n. sp.
- Pristocera erythrura*, Somaliland, KIEFFER, p. 387, Ann. Mus. Genova xli, n. sp.
- Proctotrypes, scymni*, p. 67, *japonicus*, p. 68, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *P. unidentatus*, Chile, KIEFFER, p. 145, Revist. chilena viii : n. spp.
- Proplatygaster n. g.* p. 144, *rufipes* n. sp., Chile, p. 145, KIEFFER, t. c.
- Pseudisobrachium laticeps*, Bolivia, p. 368, *distinguendum*, Paraguay, *intermedium*, Sardinia, p. 369, KIEFFER, Ann. Mus. Genova xli, n. spp.
- Rhabdepyris armatus*, New Guinea, p. 410, *R. ? albipes*, Paraguay, p. 411,

- KIEFFER, t. c.; *R. hæmorrhoidalis*, Texas, KIEFFER, p. 528, Arkiv Zool. i : n. spp.
- Ropronia garmani*, pl. xiv, p. 212, Ent. News Philad. xv.
- Sactogaster hakonensis*, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, n. sp.
- Scaphepyris rufus*, description, KIEFFER, p. 370, Ann. Mus. Genova xli.
- Scelio striatigena*, p. 530, *bisulcatus*, p. 531, Texas, KIEFFER, Arkiv Zool. i, n. spp.
- Scleroderma cereicolle*, Guinea and Italy, p. 374, *luteicolle*, Burma, *nigrum*, Sumatra, *castaneum*, Ternate, p. 375, KIEFFER, Ann. Mus. Genova xli, n. spp.
- Spilomicrus japonicus*, Sapporo, ASHMEAD, p. 69, J. N. York Ent. Soc. xii, n. sp.
- Tanynotus* n. g. *Bethylinæ*, p. 140, *T. rufithorax* n. sp., Cape Colony, p. 141, CAMERON, Rec. Albany Mus. i.
- Telenomus*, parthenogenesis, WASSILIEW, Zool. Anz. xxvii, p. 578.
- T. catacanthæ*, Philippines, ASHMEAD, p. 284, Canad. Ent. xxxvi; *T. atamiensis*, *nawai*, *mitsukurii*, p. 72, *hakonensis*, *gifuensis*, p. 73, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *T. fimbriatus*, Wisconsin, KIEFFER, p. 539, Arkiv Zool. i : n. spp.
- Trissacantha striaticeps*, Texas, KIEFFER, p. 535, Arkiv Zool. i, n. sp.

CYNIPIDÆ.

[Cf. ASHMEAD (46), BEUTENMÜLLER (119), CAMERON (224, 225), FROGGATT (562), KIEFFER (791, 795, 797), MATTEI (923), RÖSSIG (1189).]

KIEFFER completes the Vol. on *Cynipides* etc., ANDRÉ'S Hym. Eur. Alg. vii bis.

List of types of *Cynipidæ* in the American Museum of Natural History, BEUTENMÜLLER (120).

Postembryonal development of *Cynipidæ* larvæ: their glands, with other histology, RÖSSIG, Zool. Jahrb. Syst. pp. 19-70, pls. iii-vi.

Anacharoides n. g. *Anacharinæ*, *A. striaticeps* n. sp., Cape Colony, CAMERON, p. 160, Rec. Albany Mus. i.

Andricus targionii, gall, TROTTER, p. 86, Marcellia iii.

A. japonicus, Hakone, ASHMEAD, p. 81, J. N. York Ent. Soc. xii, n. sp.

Bothrochalcis n. g. *Eucoilinæ*, p. 163, *B. erythropoda* n. sp., Grahamstown, p. 164, CAMERON, Rec. Albany Mus. i.

Callirhytis hakonensis, p. 81, *toburo*, p. 82, Japan, ASHMEAD, J. N. York Ent. Soc. xii, n. sp.

Cynips n. sp. ? gall, TROTTER, p. 10, cut, Marcellia iii.

Dryophanta japonica, p. 79, *serrate*, *brunneipes*, *nawai*, p. 80, *hakonensis*, *mitsukurii*, p. 81, Japan, ASHMEAD, J. N. York Ent. Soc. xii, n. spp.

Hypodiranchis aphidæ, Australia, FROGGATT, p. 612, Agric. Gaz. N. S. W. xv, n. sp.

Neuroterus nawai, *atemiensis*, *hakonensis*, Japan, ASHMEAD, p. 79, J. N. York Ent. Soc. xii, n. spp.

Oberthurella tibialis, Cameroons, KIEFFER, p. 107, Ent. Tidskr. xxv, n. sp.

Onychia japonica, Japan, ASHMEAD, p. 76, J. N. York Ent. Soc. xii, n. sp.

Paraulax n. g. p. 43, *perplexus* n. sp., Chile, p. 44, KIEFFER, Revist. chilena viii.

Rhodites hakonensis, Japan, ASHMEAD, p. 82, J. N. York Ent. Soc. xii, n. sp.

Synergus atemiensis, p. 77, *gifuensis*, *hakonensis*, p. 78, Japan, ASHMEAD, t. c. n. spp.

Xyalaspis atemiensis, Japan, ASHMEAD, p. 76, t. c. n. sp.

Xystus japonicus, Japan, ASHMEAD, p. 77, t. c. n. sp.

SESSILIVENTRES.

SIRICIDÆ and CEPHIDÆ.

[Cf. ASHMEAD (42), MOCSÁRY (953).]

KONOW continues his synopsis of *Chalastogastra*, pp. 225–288, *Cephini* and *Xyelini*, as part of Zeitschr. Hym. Dipt. iv.

Janus compressus, habits, metamorphosis, JABLONOWSKI, pp. 67–72 & 89–94, Rov. Lapok xi.

Paururus pinicola, characters ♂, ASHMEAD, p. 64, Canad. Ent. xxxvi.

P. californicus, *hopkinsi*, N. America, id. l. c. n. spp.

Sirex augur, metamorphosis, XAMBEU, p. 167, Ann. Soc. Linn. Lyon l.

S. tazodii, *fiskei*, N. America, ASHMEAD, p. 63, Canad. Ent. xxxvi, n. spp.

Syrista similis, Japan, *speciosa*, Tonkin, MOCSÁRY, p. 496, Ann. Mus. Hungar. ii, n. spp.

Tremex atratus, Tonkin, MOCSÁRY, p. 498, t. c. n. sp.

Xiphydria melanaria, *varia*, Tonkin, MOCSÁRY, p. 497, t. c. n. spp.

TENTHREDINIDÆ.

[Cf. BISSCHOPP (131), CAMERON (236), DONCASTER (402), KONOW (833–838), MOCSÁRY (951), VAN ROSSUM (1190), SAUSSURE (1218).]

MORICE continues his notes on British *Tenthredinidæ*, Ent. Mag. xl, passim.

Tenthredinoidea of Alaska, KINCAID (801).

ADELUNG has notes on the *Tenthredinidæ* enumerated and described by Konow last year, Annuaire Mus. St. Petersb. viii. T. c. pp. xxxvii, xxxviii.

Parthenogenesis of *Nematus*, DONCASTER, P. Cambridge Soc. xii, pp. 474–476.

Allantus viduus, sexes, ZAVATTARI, p. 2, Boll. Mus. Torino xix, No. 482 ;

A. jacutensis ♂, KONOW, p. 268, Zeitschr. Hym. Dipt. iv.

Amauronematus poppii, p. 260, *spurcus*, p. 261, N. Europe, KONOW, t. c. n. spp.

Antholcus n. g. for *Tenthredo varinervis* Spin., KONOW, p. 3, t. c.

Arge uncinata, *petacacia*, p. 237, *braunsi*, p. 238, E. Africa, KONOW, t. c. n. spp.

Athalia rufoscutellata var. n. *obscurata*, KONOW, p. 264, t. c.

A. leucostoma, Kashmir, CAMERON, p. 108, Zeitschr. Hym. Dipt. iv, n. sp.

Atomaceros Ashm., without type, KONOW, p. 239, Zeitschr. Hym. Dipt. iv.

Blennocampa geniculata, injurious in Sweden, characters of larva and of others allied, the larvæ found on *Fragaria*, TULLGREN, pp. 230–236, Ent. Tidskr. xxv.

Cimbex, saws (continued from last year), BISSCHOPP VAN TUINEN, Tijdschr. Ent. xlvii, pp. 177–180, pls. xii, xiii ; *C. fagi*, life-history, parasites, VAN ROSSUM, pp. 69–98, pls. 3–5, Tijdschr. Ent. xlvii.

Clavellaria konowi, Tonkin, *gracilentia*, Amurland, FRIESE, p. 351, Zeitschr. Hym. Dipt. iv, n. spp.

Distega n. g. p. 244 [2], near *Blennocampa*, *D. sjostedti*, p. 245 [2], n. sp., S. Africa, KONOW, Zeitschr. Hym. Dipt. iv.

Dolerus ephippiatus (= *umbraticus* Marl. = *affinis* Cam.), KONOW, p. 265, t. c.

Emphytus didymus var. n. *niger*, KONOW, p. 264, t. c.

Entodecta beckeri, Caucasus, KONOW, p. 4, t. c. n. sp.

Labidurge, table of tropical American, KONOW, pp. 231–233, Zeitschr. Hym. Dipt. iv.

- L. scitula*, Peru, p. 233, *adusta*, *fucosa*, *parca*, p. 234, *immunda*, Costa Rica, *vitrea*, p. 235, *nubeculosa*, *vulga*, p. 236, Brazil, KONOW, t. c. n. spp.
- Lagium* n. g. for *Tenth. atrovioleaceum* Nort., and *irritans* Sm., and *platyceros* Marl., KONOW, p. 246 [2], t. c.
- Leptocercus duplex*, larva, CARPENTIER, p. 46, Zeitschr. Hym. Dipt. iv.
- Lygeonematus*, revision, KONOW, pp. 193–208, 248–260, Zeitschr. Hym. Dipt. iv.
- L. gerulus*, p. 199, *pallidus*, p. 204, *pædidus*, p. 205, *friesei*, p. 208, *dæbelii*, p. 249, *corpulentus*, p. 252, *boreus*, *pachyvalvis*, p. 253, *alpicola*, p. 254, North and Centr. Europe, KONOW, t. c. n. spp.
- Macrophya annulicornis*, Saghalin Island, p. 266, *hispana*, Madrid, p. 267, KONOW, t. c. n. spp.
- Megalodontes mercetti*, p. 226, *capitalatus*, p. 227, *mundus*, p. 228, Spain, *nigritegulis*, Ural Mts., p. 229, KONOW, t. c. n. spp.
- Monostegia antipoda*, validity, KIRBY, p. 84, Entomologist 1904.
- Pachynematus glesipennis*, Siberia, p. 25, *zaddachi*, Europe, p. 26, *lichtwardti*, Altvater Mts., *pullus*, Europe, *foveolatus*, Siberia, p. 31, *alpestris*, p. 146, *nigerrimus*, p. 148, *gehrsti*, p. 149, Europe, *vaginosus*, p. 151, Siberia, *legirupus*, Europe, *saunio*, Siberia, p. 153, *lentus*, p. 154, *sagulatus*, *ravidus*, p. 155, *pumilio*, p. 156, [n. spp. last year] fully described, KONOW, Zeitschr. Hym. Dipt. iv.
- Periclista mutabilis*, Texas, KONOW, p. 241 [2], t. c. n. sp.
- Phyllotoma leucomelæna* Kl. = (*aceris* McLachl.), KONOW, p. 264, t. c.
- Pontania poppii*, *arcticornis*, North Russia, KONOW, p. 230, t. c. n. spp.
- Poppia* n. g. near *Phyllotoma*, *P. athalioides* n. sp., E. Siberia, KONOW, p. 263, t. c.
- Priophorus æqualis* ♀, KONOW, p. 240, t. c.
- Ptenus nigripectus* Nort. ♀, KONOW, p. 239, t. c.
- Pteronus*, synonymical catalogue, KONOW, pp. 41–44, t. c. ; *P. brevisvalvis*, *polyspilus*, larvæ, CARPENTIER, t. c. p. 46 ; *P. miliaris* and *cadderensis*, colour of larvæ, VAN ROSSUM, p. 108, Ent. Ber. Nederland. i ; *P. ribesii*, proportions of sexes, LOISELLE, p. 235, Feuille Natural. xxxiv.
- P. pallens*, Irkutsk, p. 34, *kriegeri*, p. 35, *minus*, p. 38, Centr. Europe, KONOW, Zeitschr. Hym. Dipt. iv ; *P. dossuarius*, E. Siberia, *fastosus*, Lapland, KONOW, p. 262, t. c. : n. spp.
- Ptilia lauta*, Costa Rica, KONOW, p. 239, t. c. n. sp.
- Rhogogastera fulvipes*, larva, CARPENTIER, p. 46, Zeitschr. Hym. Dipt. iv.
- Selandria (Monophadnus) paviei*, Siam, pl. xii, fig. 6, p. 202, SAUSSURE, Mission Pavie iii, n. sp.
- Taxonus delumbis* ♂, KONOW, p. 265, Zeitschr. Hym. Dipt. iv.
- Tenthredo atra* var. n. *nobilis*, KONOW, p. 269, t. c.
- Tenthredopsis albata*, Transcaucasus, p. 267, *nigroscutellata*, Irkutsk, p. 268, KONOW, t. c. n. spp.
- Tomostethus kirbyi*, Mexico = (♀ *Monoph. erebus* K.), KONOW, p. 241 [2], t. c. n. sp.
- Waldheimia*, characters and components, KONOW, p. 242 [2], t. c.
- W. atra*, *galerita*, p. 243 [2], *pellucida*, p. 244 [2], S. America, id. t. c. n. spp.

(c.) *LEPIDOPTERA.*

- Glands, BORDAS (148) and C.R. Soc. Biol. Ivii, pp. 474-476.
 Notes on habits of various larvæ, XAMBEU (1539).
 Radio-activity effect on *Lep.* pupæ, TOMALA (1391).
 Alaska *Lepidoptera*, reprint, DYAR (440).
 List of additional types of *Lep.* in the American Museum, Natural History, BEUTENMÜLLER (122).
 Notes, in Russian, on Staudinger and Rebel's Catalogue, ALPHÉRAKY (25).
 Interesting points, popular address, JANET (761).
 Cocoons, coloration of, VERNON (1443), DEWITZ (376).
 OUDEMANS has a note on the views of STANDFUSS and himself as to the position of the wings in repose, Biol. Centrbl. xxiv, pp. 473, 474.
 Catalogue of gynandromorphic Palearctic *Lepidoptera*, SCHULTZ, Allg. Zeitschr. Ent. ix, pp. 304-310.
 Descriptive Catalogue of gynandromorphic *Lep.*, part IV, SCHULTZ, Berlin. ent. Zeitschr. xlix, pp. 71-116.
 Table of the families of Palearctic *Lepidoptera*, HORMUZAKI (707).
 The number of species of European *Lep.* of which the eggs are known, SLEVOGT, p. 11, Soc. ent. xix.
Lepidoptera infested by Pebrine, LUTZ & SPLENDORE (893).

RHOPALOCERA.

- Classification of Indian *Rhopalocera*, note supplementary to paper of last year, YOUNG, p. 498, J. Bombay Soc. xv.
 Distribution of Indian *Rhopalocera*, YOUNG (1542).
 Synonymic Catalogue of *Rhopalocera* in the Bombay collection, YOUNG, J. Bombay Soc. xv, pp. 483-497.
Rhopalocera of Ceylon, peculiarities, distribution etc., MANDERS, J. Bombay Soc. xvi, pp. 76-85.
 Migration of butterflies in Ceylon, MANDERS, pp. 703-706, Tr. ent. Soc. London 1904.
 Annotated list of *Rhopalocera* of Borneo, part I (*Danainæ* to *Amathusiinæ*), SHELFORD, J. Straits Asiat. Soc. xli, pp. 81-111.
 An account of the *Rhopalocera* collected by Burchell in Brazil, 1825-1830, is given by SANDERS & POULTON, Ann. Nat. Hist. xiii, pp. 305 etc., pl. vi.
Rhopalocera of Trinidad, catalogue, 289 spp., KAYE, pp. 159-228, pls. xvii, xviii, Tr. ent. Soc. London 1904.
Rhopalocera of Saône-et-Loire, ANDRÉ (31).
 The *Rhopalocera* of Bosnia and Herzegovina, REBEL, Ann. Hofmus. Wien xix, pp. 142-192.
 LATHY briefly describes 45 aberrations of exotic *Rhopalocera* and figures several of them, Tr. ent. Soc. London 1904, pp. 65-70, pl. x.
 Enemies of butterflies, various notes, J. Bombay Soc. xv, pp. 530, 531.
 Sensitiveness of butterflies to light, PARKER (1011).
 "Tails" of the wings discussed, PIEPERS (1083).
 Some eggs described, BACOT & TUTT, pp. 53-56, 108, Ent. Rec. xvi.

PAPILIONIDÆ.

[Cf. ALPHÉRAKY (25), AURIVILLIUS (64), EHRLMAN (447), FRUHSTORFER (567), LEIGH (871), MOORE (956), NEAVE (977), RIPPON (1174), ROTHSCHILD (1194, 1197, 1199), SCHULTZ (1248), SUFFERT (1353).]

MOORE completes the Indian *Papilionidæ* in his work, Lep. ind. vi, pp. 105-124, pls. 513-517.

Ornithoptera, monograph, part 17, the following figured, *Trogonoptera trojana* ♀, pl. 28, *P. miranda* ♂, pl. 66A, ♀, pl. 66B, ♀ var. pl. 66C, RIPPON (1174); *O. ritsemæ* var. n. *tantalus*, EHRLMAN, p. 214, Ent. News Philad. xv.

O. cambyses, Ceylon, EHRLMAN, p. 215, t. c. n. sp.

Papilio bridgei togonis and *ortegæ* subsp. n., ROTHSCHILD, p. 453, Nov. Zool. xi; *P. galienus peculiaris*, pl. i, fig. 7, and *whitnalli* subsp. n., NEAVE, p. 342, Nov. Zool. xi; *P.*, numerous African subsp. n., SUFFERT, pp. 90-107, Deutsche ent. Zeitschr. Iris xvii; *P. aristolochiæ antiphylus* subsp. n., FRUHSTORFER, p. 302, Deutsche ent. Zeitschr. Iris xvi; *P.*, subsp. n., FRUHSTORFER (566); *P. polydorus asinius* subsp. n., p. 305, *P. agamemnon kineas* and *appius* subsp. n., pp. 306, 307, FRUHSTORFER, Ent. Meddel. ii; *P. jason sankapura* subsp. n., FRUHSTORFER, p. 309, Ins. Börse 1904; *P. eurypilus lepidus* subsp. n., *echidna echidnides* subsp. n., FRUHSTORFER, p. 141, t. c.; *P. macareus indochinensis* and *argentiferus*, FRUHSTORFER, p. 131, cuts, t. c.; *P.*, numerous subsp. n., FRUHSTORFER, pp. 180, 181, t. c.; *P. canopus kallon* subsp. n., FRUHSTORFER, p. 157, t. c.; *P. philolaus ab. felicitis*, FRUHSTORFER, p. 25, Soc. ent. xix; *P. agamemnon atropictus* subsp. n., FRUHSTORFER, p. 195, Berlin. ent. Zeitschr. xlix; *P. merope*, characters of allied forms, table, TRIMEN, p. 691, Tr. ent. Soc. London 1904; *P. cenea*, life-history, bred varr., LEIGH & POULTON, pp. 677-688, pl. xxxi, Tr. ent. Soc. London 1904; *P. homerus*, larval habits, SWAINSON, p. lv, P. ent. Soc. London 1904.

P. schultzei, CAMEROONS, AURIVILLIUS, p. 363, Ins. Börse 1904; *P. boosi*, p. 89, pl. i, fig. 2, *chrapkowskii*, p. 98, pl. ii, fig. 2, *mobii*, p. 104, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii; *P. klagesi*, Venezuela, EHRLMAN, p. 215, Ent. News Philad. xv : n. spp.

Parnassius, notes on Fruhstorfer's varr., ELWES, pp. 388, 389, Deutsche ent. Zeitschr. Iris xvi; *P.*, melanic varr., OBERTHÜR, p. 174, Bull. Soc. ent. France 1904; *P. nomion*, note, KRULIKOVSKY, p. 90, Rev. Russe Ent. iv; *P. nomion titan* subsp. n., p. 308, *P. apollonius gloriosus* subsp. n., p. 309, FRUHSTORFER, Deutsche ent. Zeitschr. Iris xvi; *P. acco gemmifer* subsp. n., FRUHSTORFER, p. 25, Soc. ent. xix; *P. nordmanni* var. n. *trimaculata*, SCHAPOSCHNIKOV, p. 191, Annuaire Mus. St. Petersb. ix; *P. mnemosyne* var. n. *halteres*, MUSCHAMP, p. 52, Ent. Rec. xvi, oviposition id. l.c.; *P.*, 16 varr. described and three figured, SCHULTZ, pp. 274-281, pl. iii, Berlin. ent. Zeitschr. xlix; *P. delphinus albulus*, variation, 7 subvarr. distinguished and named, HUWE, pp. 314-328, Berlin. ent. Zeitschr. xlix.

Thais cerisyi var. n. *cretica*, REBEL, p. 2, Verh. Ges. Wien liv.

Troides goliath goliath, and *T. goliath titan*, ROTHSCHILD, p. 310, Nov. Zool. xi; *T. victorie rubianus* subsp. n., ROTHSCHILD, p. 654, t. c.; *T. haliphron ikarus* subsp. n., FRUHSTORFER, p. 157, Ins. Börse 1904; *T. haliphron ikarus* subsp. n., FRUHSTORFER, p. 140, Deutsche ent. Zeitschr. Iris xvii.

T. chimæra, New Guinea, ROTHSCHILD, p. 311, pl. iii, fig. 25, Nov. Zool. xi, n. sp.

PIERIDÆ.

[Cf. ALPHÉRAKY (25), BUTLER (207, 208), DANNATT (351), FAWCETT (492), FRUHSTORFER (565), GOELDI (616), KAYE (775), MANDERS (901), MOORE (956), NEAVE (977), REBEL (1122), ROTHSCHILD (1194, 1197), SHARPE (1286), SUFFERT (1353, 1354), TRIMEN (1394).]

Danaus to be used for *Pieris brassicæ* etc., MOORE, Lep. ind. vi, p. 126, Indian species described and figured, pp. 127–136, pls. 518–520.

Migration of *Pieridæ* in the Amazons, *Eurema* and *Catopsilia*, GOELDI (615).

The scent of males, DIXEY, pp. lvi–lx, P. ent. Soc. London 1904, LONG-STAFF, t. c. p. lxxxix.

Aporia crataegi, measurements of wings, BACHMETJEW (72).

Appias rhodope dopero subsp. n., SUFFERT, p. 76, Deutsche ent. Zeitschr. Iris xvii.

A. weberi, p. 73, *bachi*, p. 74, *udei*, p. 75, *hændeli*, p. 76, Africa, SUFFERT, t. c. n. spp.

Belenois gidica, *abyssinica* and *westwoodi*, relations, BUTLER, p. 426, Ann. Nat. Hist. xiii.

Callidryades, seasonal phases, synonymy, BUTLER, pp. 410–414, op. cit. xiv.

Catopsilia pyranthe varr., MANDERS, pp. 701–703, pl. xxxiv, Tr. ent. Soc. London 1904; *C. eubule*, range, HOLLAND & WOOD, p. 41, Ent. News Philad. xv.

Colias myrmidone balcanica varr., REBEL, p. 148, pl. iv, Ann. Hofmus. Wien xix; *C. eogene miranda* and *C. phicomone phile*, discussed, ELWES, pp. 389, 390, Deutsche ent. Zeitschr. Iris xvi; *C. eogene* var. *leechi*, pl. ix, figg. 10, 10A, p. 140, synonymy, p. 141, FAWCETT, P. Z. S. 1904, ii; *C. electra*, pale form, pl. xx, fig. 7c, melanic form, fig. 7d, TRIMEN, p. 243, Tr. ent. Soc. London 1904; *C. edusa* ab. n. *velata*, RAGUSA, p. 42, Natural. Sicil. xvii; *C. edusa* ab. n. *cærulea*, VERITY, p. 54, Entomologist 1904; *C. edusa*, early stages, HARRISON, pp. 172–176, Ent. Rec. xvi.

C. berylla, pl. ix, fig. 8, p. 139, *nina*, fig. 9, p. 140, Khamba Jong, FAWCETT, P. Z. S. 1904, ii, n. spp.

Delias, New Guinea species, notes on, pp. 312–317, *D. kummeri* f. *ligata*, n. pl. ii, fig. 20, *cuningputi* ♀, figg. 5, 6, *arow* ♀, fig. 4, *weiskei* n. n. for *Tachyris weiskei* Ribbe, *itamputi* ♀, figg. 10, 11, *niepelti* ♀, fig. 3, ROTHSCHILD, Nov. Zool. xi; *D. schoenbergi choiseuli* subsp. n., ROTHSCHILD, p. 453, t. c.; *D. timorensis gardineri* n. n., FRUHSTORFER, p. 141, Ins. Börse 1904; *D. timorensis gardineri* subsp. n. (*vishnu* Moore, probably = *timorensis*), FRUHSTORFER, pp. 345, 346, Stettin Ent. Zeit. lxxv.; *D. dice* and allies, FRUHSTORFER, pp. 307, 308, Ent. Meddel. ii.

D. dives, pl. ii, fig. 14, p. 313, *clathrata*, figg. 7–9, *microsticha*, figg. 18, 19, *mira*, figg. 12, 13, p. 315, *eichhorni*, figg. 15–17, *meeki*, figg. 1, 2, p. 316, ROTHSCHILD, Nov. Zool. xi; *D. alberti*, Solomon islds., ROTHSCHILD, p. 454, t. c.; *D. hempeli*, Gilolo, DANNATT, p. 173, pl. vii, fig. 3, Entomologist 1904 : n. spp.

Dismorphia broomeæ ♀, KAYE, p. 201, Tr. ent. Soc. London 1904.

Eronia, African n. subsp., SUFFERT, pp. 85–89, Deutsche ent. Zeitschr. Iris xvii.

Gonepteryx rhamni var. *cleopatra*, LUCAS, p. 240, Entomologist 1904.

Herpania eriphia var. n. *straminea*, AURIVILLIUS, p. 4, cut, Jägerskiöld exp. 8; *H. lactipennis* = (*eriphia* var. *straminea* Auriv.), BUTLER, p. 428, Ann. Nat. Hist. xiii.

Huphina ethel, pl. ii, fig. 3, p. 200, FRUHSTORFER, Berlin. ent. Zeitschr. xlix.

- Itaballia* n. g. for *Pieris pandosia* Hew., KAYE, p. 204, Tr. ent. Soc. London 1904.
- Mylothris*, African subsp. n., SUFFERT, pp. 72, 73, Deutsche ent. Zeitschr. Iris xvii.
- M. triakensis*, Victoria Nyanza, pl. 1, fig. 9, p. 341, NEAVE, Nov. Zool. xi ; *M. beethoveni*, p. 70, *schumanni*, p. 71, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii ; *M. ertli*, Victoria Nyanza, SUFFERT, p. 127, pl. iii, fig. 6, t. c. : n. spp.
- Nepheronia valeria kangeana* subsp. n., FRUHSTORFER, p. 347, Stettin Ent. Zeit. lxxv.
- Pieris*, African subsp. n., SUFFERT, pp. 80–83, Deutsche ent. Zeitschr. Iris xvii ; *P. dentigera ratidengi* subsp. n., SUFFERT, p. 128, Deutsche ent. Zeitschr. Iris xvii ; *P. rapæ* ab. n. *carrucci*, ROSTAGNO, p. 123, Boll. Soc. zool. Ital. xii ; *P. rapæ* ab. n. *longomaculata*, ROSTAGNO, p. 168, op. cit. xiii ; *P. napi* var. *intermedia*, JACHONTOV, pp. 15–18, Rev. Russe Ent. iv ; *P. napi* ab. n. *heptapotamica*, KRULIKOVSKY, p. 90, t. c. ; *P. brassicæ*, migration southern, in 1903, VERITY, pp. 5, 6, Bull. Soc. ent. Ital. xxxvi ; *P. brassicæ*, measurements of wings, AUEL (56).
- P. leachii*, Ladak, MOORE, p. 150, Lep. ind. vi ; *P. glucki, abti*, p. 77, *kuckeni*, p. 78, *wagneri, lortzingi*, p. 79, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii : n. spp.
- Pinacopteryx dixeyi*, Victoria Nyanza, pl. i, fig. 10, p. 341, NEAVE, Nov. Zool. xi, n. sp.
- Saletara panda engania* subsp. n., FRUHSTORFER, p. 347, Stettin Ent. Zeit. lxxv.
- Tachyris ada bandana* subsp. n., FRUHSTORFER, p. 197, Ins. Börse 1902 ; *T. weiskei*, cf. *Delias*.
- T. cerussa*, Queensland, FRUHSTORFER, p. 157, Ins. Börse 1904, n. sp.
- Teracolus*, African subsp. n., SUFFERT, pp. 128, 129, Deutsche ent. Zeitschr. Iris xvii ; *T. bacchus hydrophobus*, *T. ione aurivillii*, subsp. n., SUFFERT, p. 85, t. c. ; *T. phleggyas* var., AURIVILLIUS, p. 5, Jägerskiöld exp. No. 8 ; *T. nouna*, food-plant, WALSINGHAM, p. 99, Ent. Mag. xl.
- T. flotowi*, p. 83, *schuberti*, p. 84, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii ; *T. luderitzi*, p. 129, pl. iii, fig. 8, *wissmanni*, p. 130, pl. iii, fig. 9, E. Africa, SUFFERT, t. c. ; *T. xantholeuca*, Africa equat., SHARPE, p. 133, Entomologist 1904 : n. spp.

DANAIDÆ and ITHOMIIDÆ.

- [Cf. FRUHSTORFER (567, 570), KAYE (775), LOWE (887), NEAVE (977), SHELFORD (1289), SUFFERT (1353), SWINHOE (1364), THIEME (1381).]
- Catalogue of *Danaina*, LOWE (887).
- Subfam. *Lycoreanæ*, KAYE, p. 162, Tr. ent. Soc. London 1904.
- Numerous subsp. n. from Malay Archipelago, FRUHSTORFER, pp. 291–304, Ent. Meddel. ii.
- Amauris tartarea reata* subsp. n., SUFFERT, p. 13, Deutsche ent. Zeitschr. Iris xvii.
- A. dira*, Victoria Nyanza, pl. i, fig. 1, p. 324, NEAVE, Nov. Zool. xi ; *A. mozarti*, Cameroons, SUFFERT, p. 12, Deutsche ent. Zeitschr. Iris xvii : n. spp.
- Betanga moluccana*, Obi, SWINHOE, p. 417, Ann. Nat. Hist. xiv, n. sp.
- Calliplexa kuhniiana* subsp. n., FRUHSTORFER, p. 157, Ins. Börse 1904 ; *C.*, subsp. n., FRUHSTORFER, pp. 26, 28, 36, 61, 67, 68, 73, Soc. ent. xix.
- C. phokion*, New Guinea, id. p. 28, *liza*, Dammer isld., *menamoides*, Babber, p. 67, id. t. c. n. spp.

- Euplaea phaenareta* n. subsp., FRUHSTORFER, p. 303, Deutsche ent. Zeitschr. Iris xvi; *E. moorei thiemei* subsp. n., FRUHSTORFER, p. 166, Berlin. ent. Zeitschr. xlix; *E. crameri lanista* subsp. n., id. t. c. p. 168; *E. dufresnei nica* subsp. n., FRUHSTORFER, p. 180, Berlin. ent. Zeitschr. xlix; *E. compta adorabilis* subsp. n., FRUHSTORFER, p. 309, Ins. Börse 1904; *E. spiculifera praxithea* subsp. n., p. 73, *E. compta virudha* subsp. n., p. 74, FRUHSTORFER, Soc. ent. xix; *E. climenta valeriana* subsp. n., FRUHSTORFER, p. 157, Ins. Börse 1904; *E. dekeeri* subsp. n., FRUHSTORFER, pp. 29, 36, Soc. ent. xix; *E. amymome, godarti*, one species, POULTON, p. lxxxvi, P. ent. Soc. London 1904; *E.*, Bugong error, DIXEY, pp. ix-xiii, Tr. ent. Soc. London 1904.
- E. radica*, OBI, FRUHSTORFER, p. 301, Ent. Meddel. ii, n. sp.
- Heterosais ocalea*, egg and larva, GUPPY, p. 225, Tr. ent. Soc. London 1904.
- Leucothyris phenomoe* subsp. n. *burchelli*, pl. vi, figg. 1, 2, SANDERS, p. 315, Ann. Nat. Hist. xiii.
- Lycorea cerez*, ovum and larva, GUPPY, p. 225, Tr. ent. Soc. London 1904.
- Mechanitis vilcanota*, Peru, RÖBER, p. 105, Soc. ent. xix, n. sp.
- Nectaria*, subsp. n., FRUHSTORFER (566); *N.*, *idea*, n. subsp., FRUHSTORFER, p. 205, Ins. Börse 1904.
- Penoa kheili* ♀, THIEME, p. 163, Berlin. ent. Zeitschr. xlix.
- Salpinx assimilata bandana* subsp. n., FRUHSTORFER, p. 36, Soc. ent. xix.
- Stictoplea dufresnei nica* subsp. n., FRUHSTORFER, p. 344, Stettin Ent. Zeit. lxxv.
- S. convallaria*, Nias isld., THIEME, p. 163, Berlin. ent. Zeitschr. xlix, n. sp.
- Tithorea megara*, early stages, GUPPY, p. 225, pl. xviii, fig. 3, Tr. ent. Soc. London 1904.
- Tronga* and *Menama*, the subspecies, FRUHSTORFER, pp. 167, 168, Berlin. ent. Zeitschr. xlix.

ACRÆIDÆ and HELICONIDÆ.

[Cf. AURIVILLIUS (61), BETHUNE-BAKER (117), NEAVE (977), SHARPE (1286, 1287), SUFFERT (1353, 1354), TRIMEN (1394).]

Acraea, many African subsp. n. described, pp. 18-34, SUFFERT, Deutsche ent. Zeitschr. Iris xvii; *A. doubledayi equatorialis* subsp. n., p. 327, *oreas albimaculata* nov. f., p. 329, NEAVE, Nov. Zool. xi; *A. rahira* and varr., pl. xix, fig. 1, p. 231, TRIMEN, Tr. ent. Soc. London 1904.

A. cinerea, pl. i, fig. 16, p. 325, *wigginsii*, fig. 3, p. 326, *mystica, clarei*, fig. 4, p. 327, *byatti*, fig. 17, p. 328, Victoria Nyanza, NEAVE, Nov. Zool. xi; *A. leucopyga*, p. 92, *mairiessei*, p. 93, *ertli*, p. 94, Africa, AURIVILLIUS, Ent. Tidskr. xxv, with cuts; *A. diogenes*, p. 14, *brahmsi*, p. 15, pl. iii, fig. 4, *liszti*, p. 17, Africa, SUFFERT, Deutsche ent. Zeitschr. xvii; *A. rohlfsi*, E. Africa, SUFFERT, p. 124, pl. iii, fig. 5, Deutsche ent. Zeitschr. Iris xvii; *A. catori*, Sierra Leone, BETHUNE-BAKER, p. 223, Ann. Nat. Hist. xiv; *A. harrisoni*, Nyangori, SHARPE, p. 132, Entomologist 1904; *A. melanosticta*, Toro, SHARPE, p. 181, Entomologist 1904: n. spp.

Planema, numerous subsp. n., SUFFERT, pp. 34-39, Deutsche ent. Zeitschr. Iris xvii.

P. haydni, Usambara, id. p. 34, t. c. n. sp.

NYMPHALIDÆ.

[Cf. ALPHÉRAKY (25), AURIVILLIUS (61), BETHUNE-BAKER (117), DANNATT (351), DYAR (422), FAWCETT (492), FIELD (499, 500), FLETCHER (515, 516), FRUHSTORFER (567), LATHY (860), LEIGH (871), NEAVE (977),

C. OBERTHÜR (1987), ROTHSCHILD (1194, 1197), SHARPE (1286, 1287), SHELFORD (1289), SUFFERT (1353, 1354, 1355A), SWINHÖE (1364), THIEME (1379).]

- Acca obiana*, Obi, SWINHÖE, p. 418, Ann. Nat. Hist. xiv, n. sp.
Antanartia amauroptera, Toro, SHARPE, p. 181, Entomologist 1904, n. sp.
Apatura ilia varr. n., SCHULTZ, pp. 129-134, Abh. Ges. Grlitz xxiv.
Apaturina erminea xanthocera subsp. n., ROTHSCHILD, p. 452, Nov. Zool. xi ;
A. erminia erinna, p. 329, figg. 3, 4, *erminia octavia*, fig. 5, other
subsp. n. pp. 328-332, FRUHSTORFER, Ent. Meddel. ii.
Argynnis pales subsp. n., FRUHSTORFER, p. 306, Deutsche ent. Zeitschr.
Iris xvi ; *A. paphia*, melanic ♀, OBERTHÜR, p. 175, Bull. Soc. ent.
France 1904 ; *A. pandora* ab. n. *fulva*, COSMOVICI, p. 162, Bull. Soc.
ent. France 1904 ; *A. adippe norvegica*, SCHULTZ, p. 137, Abh. Ges.
Grlitz xxiv ; *A. paphia valesina*, localisation of, REBEL, p. 119, Verh.
Ges. Wien liv.
A. claudia, Khamba Jong, pl. ix, fig. 3, p. 136, FAWCETT, P. Z. S. 1904, ii,
n. spp.
Atella alcippe subsp. n., FRUHSTORFER, pp. 308-312, Ent. Meddel. ii ; *A.*
alcippe enganica subsp. n., pl. ii, fig. 1, p. 192, FRUHSTORFER, Berlin.
ent. Zeitschr. xlix.
Basilarchia proserpina, ? varr. or hybrids, the allies, FIELD, Psyche xi,
pp. 1-6, pls. i-iii.
Brenthis thore, egg and young larva, CHAPMAN, pp. 236-238, pls. ix, x,
Ent. Rec. xvi, TRAVIS, t. c. p. 239.
B. andersoni, Brit. Columbia, DYAR, p. 39, J. N. York Ent. Soc. xii,
n. sp.
Catagramma audofleda (= *felderi* var. Hew.), Peru, THIEME, p. 159, Berlin.
ent. Zeitschr. xlix, n. sp.
Charaxes, African subsp. n., SUFFERT, pp. 122, 123, Deutsche ent.
Zeitschr. Iris xvii ; *C. eudoxus mechowi* ♂, NEAVE, p. 334, Nov. Zool.
xi ; *C. polyxena enganica* subsp. n., pl. i, fig. 4, p. 194, FRUHSTORFER,
Berlin. ent. Zeitschr. xlix ; *C. polyxena enganica* subsp. n., FRUH-
STORFER, p. 341, Stettin Ent. Zeit. lxxv ; *C. jasius*, larva, no. of moults,
imperfect ecdysis, CHRÉTIEN, p. 108, Bull. Soc. ent. France 1904,
GIARD, t. c. p. 117 ; *C. jasius*, food, GIARD, p. 178, t. c. ; *C. jasius*,
seasonal dimorphism, larva, GIARD, p. 44, t. c.
C. harrisoni, Africa equat., SHARPE, p. 133, Entomologist 1904, n. sp.
Chlorippe godmani, Venezuela, DANNATT, p. 173, pl. vii, fig. 1, Entomologist
1904, n. sp.
Cirrochroa malaya n. subsp., FRUHSTORFER, p. 157, Ins. Börse 1904 ;
C. regina princesa subsp. n., FRUHSTORFER, p. 75, Soc. ent. xix.
Cupha lampetia lampetina subsp. n., p. 316, fig. 2, other subsp. n., pp. 316
-318, FRUHSTORFER, Ent. Meddel. ii ; *C. erymanthis dohertyi* subsp. n.,
FRUHSTORFER, p. 191, Berlin. ent. Zeitschr. xlix ; *C. erymanthis*
dohertyi subsp. n., FRUHSTORFER, p. 343, Stettin Ent. Zeit. lxxv.
Cymothoe theobene nebethoe subsp. n., SUFFERT, p. 115, Deutsche ent.
Zeitschr. Iris xvii.
C. congoensis, p. 115, *alexander*, p. 117, *weymeri*, p. 119, Africa, SUFFERT,
t. c. n. spp.
Cynthia asela var., GREEN, p. 76, cut, Spolia Zeylan. ii ; *C. arsinoe figalea*
subsp. n., FRUHSTORFER, p. 26, Soc. ent. xix.
Cyrestis, subsp. n., FRUHSTORFER, pp. 323-328, Ent. Meddel. ii ; *C.*
perander enganica, pl. ii, fig. 2, p. 191, FRUHSTORFER, Berlin. ent.
Zeitschr. xlix.
C. giloloensis, Gilolo, LATHY, p. 71, Entomologist 1904, n. sp.
Didonis latilavata, Ecuador, THIEME, p. 159, pl. i, figg. 1, 2, Berlin. ent.
Zeitschr. xlix, n. sp.

- Diestogyna hobleyi*, Victoria Nyanza, NEAVE, p. 334, Nov. Zool. xi ; *D. intermixta*, Congo, *butleri* (= *amaranta* Butl. nec Karsch), AURIVILLIUS, p. 96, Ent. Tidskr. xxv : n. spp.
- Dione vanille* var. *passifloræ*, COCKERELL, p. 331, Canad. Ent. xxxvi.
- Ergolis pagenstecheri*, E. Africa, SUFFERT, p. 125, Deutsche ent. Zeitschr. Iris xvii, n. sp.
- Eulepis delphis* subsp. n., FRUHSTORFER, p. 75, Soc. ent. xix ; *E. pyrrhus antigonus* subsp. n., FRUHSTORFER, p. 140, Ins. Börse 1904 ; *E. dolon* subsp. n., FRUHSTORFER, p. 381, t. c.
- Euphædra edwardsi viridis* subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- E. paradoxa*, Victoria Nyanza, NEAVE, p. 333, Nov. Zool. xi ; *E. paradoxa* ♂, SHARPE, p. 132, Entomologist 1904 ; *E. rattrayi*, p. 182, christyt, p. 183, Toro, SHARPE, Entomologist 1904 : n. spp.
- Euptera dorothea*, Sierra Leone, BETHUNE-BAKER, p. 223, Ann. Nat. Hist. xiv, n. sp.
- Euryphene lætitia* subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- E. fulgurata*, Congo, AURIVILLIUS, p. 95, with cut, Ent. Tidskr. xxv, n. sp.
- Euryphura porphyryon* and *plautilla* subsp. n., SUFFERT, p. 114, Deutsche ent. Zeitschr. Iris xvii.
- E. oliva*, Togo, SUFFERT, p. 112, with subsp. *albula*, p. 113, t. c. n. sp.
- Euthalia adona pura* subsp. n., FRUHSTORFER, p. 309, Ins. Börse 1904 ; *E. lubentina* subsp. n., FRUHSTORFER, pp. 438-351, Stettin Ent. Zeit. lxv.
- Grapta gigantea*, melanic var., OBERTHÜR, p. 174, Bull. Soc. ent. France 1904.
- Hæmatera pyramus* var. n. *rubra*, KAYE, p. 173, pl. xviii, fig. 7, Tr. ent. Soc. London 1904.
- Harna marmorata*, Toro, SHARPE, p. 183, Entomologist 1904, n. sp.
- Hypanartia delius nigrescens* subsp. n., SUFFERT, p. 108, Deutsche ent. Zeitschr. Iris xvii.
- Hypolimnas*, African subsp. n., SUFFERT, p. 110, t. c. ; *H. bolina*, variation, WATERHOUSE, p. 493, Tr. ent. Soc. London 1904 ; *H. bolina enganica* subsp. n., FRUHSTORFER, p. 193, Berlin. ent. Zeitschr. xlix ; *H. misippus*, bred varr., LEIGH, pp. 689, 690, pl. xxxii, Tr. ent. Soc. London 1904.
- Issoria*, n. subsp. from Malay Arch., FRUHSTORFER, pp. 312-316, Ent. Meddel. ii.
- Kallima rumia amiru* subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- K. rattrayi*, Toro, SHARPE, p. 182, Entomologist 1904, n. sp.
- Limenitis populi* varr., SCHULTZ, Abh. Ges. Grolitz xxiv, pp. 135, 136.
- Melitæa dejone* and *parthenie* varr., p. 11, pl. i, figg. 5-8, OBERTHÜR, Études comp. i ; *M. didyma* var., ROSTAGNO, p. 169, Boll. Soc. zool. Ital. xiii ; *M. iduna* ab. *sulitelmica*, SCHULTZ, p. 137, Abh. Ges. Grolitz xxiv.
- M. tibetana*, pl. ix, fig. 2, Khamba Jong, FAWCETT, p. 135, P. Z. S. 1904, ii, n. sp.
- Messaras mimicus*, New Guinea, pl. iii, fig. 43, ROTHSCHILD, p. 318, Nov. Zool. xi, n. sp.
- Mimacraea poultoni*, Victoria Nyanza, pl. i, fig. 18, NEAVE, p. 337, Nov. Zool. xi, n. sp.
- Neptis conspicua*, pl. i, fig. 15, p. 329, *clarei*, fig. 2, *ochracea*, fig. 5, p. 330, Victoria Nyanza, NEAVE, t. c. ; *N. livingstonei*, E. Africa, SUFFERT, p. 126, pl. iii, fig. 10, Deutsche ent. Zeitschr. Iris xvii : n. spp.
- Parthenos* subsp. n., FRUHSTORFER (566) ; *P. sylvia* subsp. n. ; FRUHSTORFER, pp. 73, 74, Soc. ent. xix.

- Phyciodes hankami*, Canada, FLETCHER, p. 122, pl. fig., Canad. Ent. xxxvi, and p. 208, Tr. R. Soc. Canada ix, Sect. 4, n. sp.
- Polygonia c-album* var., FUCHS, Jahrb. nassau. Ver. lvii, p. 31, pl. ii, fig. 1.
- Precis*, African subsp. n., SUFFERT, pp. 108, 109, Deutsche ent. Zeitschr. Iris xvii.
- P. adulatrix*, Sumba, FRUHSTORFER, p. 7, SB. Berlin. ent. Zeitschr. xlix, n. sp.
- Prothoë ribbei guizonis* subsp. n., ROTHSCILD, p. 366, Nov. Zool. xi.
- Protopogonius ochraceus*, egg, KAYE, pl. xvii, fig. 3, p. 178, Tr. ent. Soc. London 1904.
- Pseudacræa hobleyi*, p. 331, *tirikensis*, pl. i, fig. 14, *terra*, p. 332, *obscura*, p. 333, Victoria Nyanza, NEAVE, Nov. Zool. xi, n. spp.
- Pyrameis cardui*, swarms, VAN ROSSUM, pp. 112–114, Ent. Ber. Nederland. i ; *P. cardui*, swarms, VAN DEN BERGH & VAN ROSSUM, pp. 148–152, Ent. Ber. Nederland. i ; *P. cardui*, migration, REBEL, p. 152, Ann. Hofmus. Wien xix ; *P. cardui*, migration, Calais, GIARD, p. 67, Feuille Natural. xxxiv ; *P. cardui*, migration, Hungary, AIGNER-ABAFI, pp. 6–9, Allg. Zeitschr. Ent. ix.
- P. indica* var. *vulcania* from Canaries and Madeira, FRUHSTORFER & STICHEL, pp. 3, 4, SB. Berlin. ent. Zeitschr. xlix.
- P. gonerilla*, ALFKEN, pl. xxxii, fig. 11, p. 589, *P. ida*, fig. 12, var. *argentata*, fig. 13, p. 602, Zool. Jahrb. Syst. xix.
- Salamis anacardii ansorgei* subsp. n., ROTHSCILD, p. 452, Nov. Zool. xi.
- S. temora virescens* subsp. n., SUFFERT, p. 109, Deutsche ent. Zeitschr. Iris xvii.
- Symbrenthia* subsp. n., FRUHSTORFER, pp. 319–323, Ent. Meddel. ii.
- Tithorea regalis*, Colombia, STICHEL, p. 18, SB. Berlin. ent. Zeitschr. xlix, n. sp.
- Vanessa*, in the Seine-inférieure, NOEL, pp. 143–146, Naturaliste 1904 ; *V. antiopa*, habits, PARKER, Mark Anniversary Volume, pp. 455–469, pl. xxxiii ; *V. antiopa*, pupation habits, FIELD, pp. 6–9, Ent. News Philad. xv ; *V. atalanta*, in New Zealand, PHILPOTT, p. 161, Tr. N. Zealand Inst. xxxvi ; *V. cardui*, migration (as recorded by Eagle Clarke), VAN ROSSUM, pp. 141–143, Ent. Ber. Nederland. i ; *V. urticae*, oviposition, habits, POULTON & HAMM and others, pp. xli–xlvi, P. ent. Soc. London 1904 ; *V. urticae nigricaria* ♂, HAVERKAMPF, p. 186, pl. i, Ann. Soc. ent. Belgique xlvi.

MORPHIDÆ, BRASSOLIDÆ, AMATHUSIIDÆ, DISCOPHORIDÆ.

[Cf. KAYE (775), RÖBER (1180), SHELFORD (1289), STICHEL (1346–1348).]

Brassolinæ revised and listed, STICHEL, Wytsman Gen. Ins. fasc. xx, 48 pp., v pls. In this work numerous varieties are described, that it is not necessary to enumerate here. The forms described in Ins. Börse by the same writer are in this paper redescribed and some of them figured.

Notes on the doubtful species of *Brassolidæ* of Felder and Boisduval, STICHEL, pp. 197 etc., Ins. Börse 1904.

Amathusia, subsp. n., FRUHSTORFER (566).

Amathuridia amythaon lucida subsp. n., FRUHSTORFER, p. 189, Berlin. ent. Zeitschr. xlix.

Brassolis astyra philocala subsp. n., STICHEL, p. 21, Ins. Börse 1904.

Caligo, STICHEL uses numerous names for divisions and subdivisions, *Brassolinæ*, pp. 35–43 ; *C.*, subsp. n., FRUHSTORFER, p. 145, Soc. ent. xviii ; *C. placidianus* var. n. *micans*, *prometheus* var. n. *atlas*, RÖBER,

- p. 146, Soc. ent. xviii; *C.*, notes on, with varr. n., FRUHSTORFER, pp. 313-320, Deutsche ent. Zeitschr. Iris xvi; *C. eurylochus* var. n. *minor*, KAYE, p. 165, Tr. ent. Soc. London 1904; *C. teucer insularis* subsp. n., STICHEL, p. 21, Ins. Börse 1904.
- C. fruhstorferi*, Honduras, Surinam, STICHEL, p. 21, Ins. Börse 1904; *C. pavo*, p. 145, *hanschi*, Colombia, *phorbas*, p. 146, Ecuador, RÖBER, Soc. ent. xviii; *C. saltus*, Trinidad, KAYE, p. 165, larva, pl. xvii, fig. 1, Tr. ent. Soc. London 1904: n. spp.
- Dasyophthalma* varr. n., STICHEL, p. 21, Ins. Börse 1904.
- Dynastor darius ictericus* subsp. n., STICHEL, p. 21, t. c.
- Hyantida* n. family for *Hyantis* and *Morphopsis*, STICHEL, p. 306, Berlin. ent. Zeitschr. xlix.
- Hyantis*, new forms, STICHEL, pp. 310-313, pl. iv, t. c.
- Morphopsis albertisi*, *astrolabensis* race, STICHEL, p. 308, t. c.
- Narope albopunctum*, Peru, *panniculus*, Paraguay, STICHEL, p. 6, Ins. Börse 1904, n. spp.
- Nepbrochoria* and *Cyclochoria* n. nn. for sects. of *Selenophanes*, STICHEL, p. 29, Brassolinæ.
- Opsiphanes* varr. n., STICHEL, p. 6 and p. 21, t. c.; *O. cassia*, pl. xvii, fig. 2, GUPPY, p. 226, Tr. ent. Soc. London 1904.
- Pseudamathusia masina*, Borneo, FRUHSTORFER, p. 155, Deutsche ent. Zeitschr. Iris xvii, n. sp.
- Psilocraspeda*, p. 31, and *Tricothamnodes*, p. 32, n. nn. for sects. of *Eryphanis*, STICHEL, Brassolinæ.
- Tenaris artemis*, 9 subsp. n., FRUHSTORFER, p. 389, Ins. Börse 1904; *T. macrops macropina* subsp. n., FRUHSTORFER, p. 26, Soc. ent. xix, *T.*, varr. n., FRUHSTORFER, pp. 129, 139, t. c.
- T. merana*, New Guinea, id. p. 138, t. c. n. sp.
- Thaumantis odana* var. n. *cyclops*, RÖBER, p. 105, t. c.

SATYRIDÆ.

- [Cf. BACHMETJEW (69, 71), DYAR (433), FAWCETT (492), KERSHAW (788), OBERTHÜR (987), REBEL (1122), RÖBER (1179), ROTHSCCHILD (1196), SHELFORD (1289), THIEME (1379, 1380), TUTT (1414).]
- Aphyssoneura pigmentaria* ♀, SUFFERT, p. 132, Deutsche ent. Zeitschr. Iris xvii.
- Argyrophorus lamna*, Bolivia, THIEME, p. 160, Berlin. ent. Zeitschr. xlix, n. sp.
- Bia actorion* var. n. *peruana*, RÖBER, p. 106, Soc. ent. xix.
- Cenonympha arcania-insubrica*, p. 24, pl. i, fig. 12, OBERTHÜR, Études comp. i; *C. arcania*, *tiphon* varr., REBEL, p. 174, pl. v, figg. 9-12, Ann. Hofmus. Wien xix; *C. dorus* varr., MUSCHAMP, p. 302, Ent. Rec. xvi; *C. pamphilus* larva, KLOKMAN, p. 134, Ent. Ber. Nederland. i.
- C. mathevi*, Vigo, TUTT, p. 308, Ent. Rec. xvi, n. sp.
- Epinephele*, abb. of Tuscan, VERITY, p. 56, Entomologist 1904; *E. jurtina*, number of eye-spots and damp seasons, BACHMETJEW, pp. 143-147, Allg. Zeitschr. Ent. ix; *E. furtina* (sic) varr., HAVERKAMPF, p. 188, Ann. Soc. ent. Belgique xlviii; *E. jurtina*, parthenogenesis of male, BACHMETJEW, pp. 1-16, Horæ Soc. ent. Ross. xxxvii; *E. lycaon* ab. n. *biocellatus*, RAGUSA, pl. iii, fig. 2, p. 110, Natural. Sicil. xvii; *E. tithonus* varr., cuts, var. n. *albida*, RUSSELL, pp. 125-127, Entomologist 1904.
- Erebia christi* and *pharte* varr., OBERTHÜR, pp. 21-23, pl. ii, figg. 13, 14, 19, 20, and iv, fig. 45, Études comp. i; *E. neoridas* varr. n. *alborittata*, *etrusca*, pl. iv, figg. 6, 7, VERITY, p. 55, Entomologist 1904; *E. manto* var. n. *ocellata*, WAGNER, p. 610, cut, Verh. Ges. Wien liv; *E. evias* and *stygne*, varr. from Guadarrama, *E. penalaræ* var. n., CHAPMAN,

- pp. xlv–xlvi, P. ent. Soc. London 1904; *E. stygne* and *epistygne*, note, NICHOLL, p. 48, Ent. Rec. xvi; *E. flavofasciata* var. n. *thiemei*, BARTEL, p. 165, Deutsche ent. Zeitschr. Iris xvii; *E. turanica* var. n. *jucunda*, PÜNGELER, p. 286, pl. vi, fig. 1, Deutsche ent. Zeitschr. Iris xvi; *E. glacialis*, larva, KRODEL, pp. 442–447, Allg. Zeitschr. Ent. ix.
- E. palarica*, N. Spain, CHAPMAN, p. lxxxvii, P. ent. Soc. London 1904, n. sp.
- Erites thetis*, Borneo, SHELFORD, p. 99, J. Straits Asiat. Soc. xli, n. sp.
- Heteronympha merope*, *philerope*, variation, KERSHAW, pp. 173–175, Victorian Natural. xx.
- H. solandri*, Australia, WATERHOUSE, p. 466, P. Linn. Soc. N. S. Wales xxix, n. sp.
- Lethe cerama*, Borneo, SHELFORD, p. 96, J. Straits Asiat. Soc. xli, n. sp.
- Lymanopoda acraëda* Butl. ♀, THIEME, p. 160, Berlin. ent. Zeitschr. xlix.
- L. sororcula*, Ecuador, p. 161, *palumba*, Bolivia, p. 462, THIEME, t. c. n. spp.
- Melanitis ismene*, variation, GREEN, p. 75, pl., Spolia Zeylan. ii.
- M. ansorgei*, Aruwimi Forest, ROTHSCHILD, p. 451, Nov. Zool. xi, n. sp.
- Mycalasis barbara mea* subsp. n., pl. iii, fig. 42, p. 319, ROTHSCHILD, t. c.
- Œneis norma*, variation, var. n., SCHULTZ, pp. 138–140, Abh. Ges. Gorlitz xxiv; *O. caryi* n. var., DYAR, p. 142, P. ent. Soc. Washington vi.
- Œ. nahanni*, Mackenzie, id. t. c. n. sp.
- Pararge megaera*, larva, KLOKMAN, p. 134, Ent. Ber. Nederland. i.
- Ragadia simplex*, pl. ix, fig. 1, p. 135, FAWCETT, P. Z. S. 1904, ii.
- Satyrus semele* ab. n. *triocellatus*, RAGUSA, pl. iii, fig. 1, p. 109, Natural. Sicil. xvii; *S. hermione*, larva, TER HAAR, p. 160, Ent. Ber. Nederland. i.
- Tisiphone abeona* var. n. *albifascia*, WATERHOUSE, p. 468, P. Linn. Soc. N. S. Wales xxix.
- Ypthima abnormis*, Borneo, SHELFORD, p. 98, J. Straits Asiat. Soc. xli, n. sp.

ERYCINIDÆ (or RIODINIDÆ), [s. l. incl. ELYMNIAS, etc.]

- [Cf. BETHUNE-BAKER (116), DANNATT (351), DRUCE (405), FRUHSTORFER (571), KAYE (775), LATHY (859, 861), RÖBER (1179), ROTHSCHILD (1194, 1197).]
- Abisara albiplaga avara*, pl. ii, fig. 23, subsp. n. *keiana*, fig. 24, subsp. n. *weiskei* ♀, pl. iii, fig. 28, ROTHSCHILD, p. 317, Nov. Zool. xi; *Abisara* subsp. n., FRUHSTORFER (566).
- A. segestes*, New Guinea, ROTHSCHILD, p. 455, Nov. Zool. xi, n. sp.
- Aricoris striata*, Ecuador, pl. xxxiv, fig. 12, p. 488, DRUCE, P. Z. S. 1904, i, n. sp.
- Calvia fulvimargo*, Peru, LATHY, p. 466, pl. xxvii, fig. 6, T. ent. Soc. London 1904, n. sp.
- Chamelinnas albivitta*, Brazil, LATHY, p. 465, pl. xxvii, fig. 5, t. c. n. sp.
- Charis candiope*, Colombia, pl. xxxiv, fig. 5, *mandosa*, Rio Janeiro, fig. 6, *myrtis*, Paraguay, figg. 6, 7, p. 486, DRUCE, P. Z. S. 1904, i, n. spp.
- Cremna aza*, Colombia, pl. xxxiii, fig. 11, DRUCE, t. c. n. sp.
- Cricosoma coccineata*, Trinidad, pl. xviii, fig. 10, p. 185, KAYE, Tr. ent. Soc. London 1904, n. sp.
- Dicallaneura amabilis*, New Guinea, pl. ii, figg. 21, 22, ROTHSCHILD, p. 318, Nov. Zool. xi; *D. ekeikei*, New Guinea, BETHUNE-BAKER, p. 370, Nov. Zool. xi; *D. milnei*, New Guinea, FRUHSTORFER, p. 147, Deutsche ent. Zeitschr. Iris xvii: n. spp.
- Elymnias esaca*, subspecies, synonymy, SHELFORD & BINGHAM, pp. 487–489, Tr. ent. Soc. London 1904; *E.*, subsp. n., FRUHSTORFER, pp. 321–323, Deutsche ent. Zeitschr. Iris xvi; *E.*, subsp. n., FRUHSTORFER, pp. 53 & 60, Soc. ent. xix.

- E. thyonæ*, Celebes, id. p. 53; *E. brookei*, Borneo, SHELFORD, p. 102, J. Straits Asiat. Soc. xli : n. spp.
- Emesis guppyi*, Trinidad, pl. xviii, fig. 9, p. 187, KAYE, Tr. ent. Soc. London 1904, n. sp.
- Erycina latifasciata*, Peru, LATHY, pl. xxvii, fig. 3, p. 464, Tr. ent. Soc. London 1904; *E. mendita*, Bolivia, pl. xxxiv, fig. 2, p. 485, DRUCE, P. Z. S. 1904, i : n. spp.
- Eurybia cærulescens*, pl. xxxiii, fig. 3, *sinuaces*, fig. 4, Peru, DRUCE, p. 482, t. c. n. spp.
- Eurygona ocalea*, Bolivia, pl. xxxiii, fig. 1, *candaria*, Colombia, fig. 2, p. 481, DRUCE, t. c.; *E. subargentea*, Bogota, LATHY, p. 463, pl. xxvii, fig. 1, Tr. ent. Soc. London 1904 : n. spp.
- Helicopsis elegans*, Trinidad, KAYE, p. 182, pl. xviii, fig. 6, Tr. ent. Soc. London 1904, n. sp.
- Ithomiola rubrolineata* (= *celtilla* var. Hew.). Peru, LATHY, p. 465, Tr. ent. Soc. London 1904, n. sp.
- Lemonias auria*, Bolivia, pl. xxxiv, fig. 4, p. 487, DRUCE, P. Z. S. 1904, i; *L. pulchra*, Peru, LATHY, p. 467, pl. xxvii, fig. 8, Tr. ent. Soc. London 1904 : n. spp.
- Libythea fulvescens*, Dominica, LATHY, p. 451, P. Z. S. 1904, i, n. sp.
- Lymnas hillapana*, Peru, RÖBER, p. 106, Soc. ent. xix, n. sp.
- Mesosemia axilla*, Bolivia, pl. xxxiii, fig. 5, *anica*, fig. 6, *paramba*, fig. 7, p. 483, *candara*, fig. 8, *carderi*, fig. 9, p. 484, Peru, *parishi*, Brit. Guiana, fig. 10, p. 485, DRUCE, P. Z. S. 1904, i; *M. elegans*, Peru, LATHY, p. 463, pl. xxvii, fig. 2, Tr. ent. Soc. London 1904 : n. spp.
- Monethe johnstoni*, Brit. Guiana, DANNATT, p. 174, pl. vii, fig. 2, Entomologist 1904, n. sp.
- Nymphidium molpe*, larva, GUPPY, p. 227, Tr. ent. Soc. London 1904.
- N. candace*, pl. xxxiv, fig. 1, Rio Janeiro, *minuta*, Brit. Guiana, fig. 10, p. 487, *augea*, Bolivia, fig. 11, *medusa*, Peru, fig. 3, p. 488, DRUCE, P. Z. S. 1904; *N. completa*, Peru, LATHY, p. 467, pl. xxvii, fig. 9, Tr. ent. Soc. London 1904 : n. spp.
- Rusalkia marathón* var. n. *stenotenía*, RÖBER, p. 106, Soc. ent. xix.
- Siseme peculiaris*, Peru, pl. xxxiv, fig. 9, p. 486, DRUCE, P. Z. S. 1904, i, n. sp.
- Stalactis canidia*, Matto Grosso, pl. xxxiv, fig. 8, p. 488, DRUCE, t. c. n. sp.
- Symmachia peruviana*, La Merced, LATHY, p. 466, pl. xxvii, fig. 7, Tr. ent. Soc. London 1904, n. sp.
- Synargis* Hübn. valid, KAYE, p. 189, Tr. ent. Soc. London 1904.
- Themone trivittata*, Peru, LATHY, p. 465, pl. xxvii, fig. 4, Tr. ent. Soc. London 1904, n. sp.
- Theope eudocia*, larva, pl. xviii, fig. 1, p. 226, *foliorum*, larva, fig. 2, p. 227, GUPPY, Tr. ent. Soc. London 1904.
- T. fasciata*, hab. ?, LATHY, p. 467, pl. xxvii, fig. 10, Tr. ent. Soc. London 1904, n. sp.

LYCÆNIDÆ.

[Cf. BETHUNE-BAKER (116–118), CATOR (250), DRUCE (407, 408), DYAR (422), FLETCHER (515, 516), KAYE (775), KRODEL (846), LATHY (861), NEAVE (977), OBERTHÜR (987), SHARPE (1286, 1288), SKINNER (1303), SUFFERT (1353, 1355), TRIMEN (1394), WATERHOUSE & TURNER (1495).]

For suggestive and synonymical notes on Australian *Lycænide* see WATERHOUSE & TURNER, P. Linn. Soc. N. S. Wales 1904, pp. 798–804.

Temperature experiments on pupa of *L. corydon* and *damon*, KRODEL, pp. 49–55, 21 cuts, Allg. Zeitschr. Ent. ix.

- Alaena rollei*, E. Africa, SUFFERT, p. 134, Ins. Börse 1904; *A. rollei*, Usambara, SUFFERT, p. 39, pl. i, fig. 5, Deutsche ent. Zeitschr. Iris xvii; *A. mulsæ*, E. Africa, n. sp., but in note=*rollei* Suff., THIEME, p. 164, Berlin. ent. Zeitschr. xlix : n. sp.
- Aphneus drucei*, Victoria Nyanza, pl. i, fig. 6, p. 338, NEAVE, Nov. Zool. xi; *A. rattayi*, Toro, SHARPE, p. 203, Entomologist 1904 : n. spp.
- Aravacus* n. g. for *Pap. linus* Sulz, KAYE, p. 197, Tr. ent. Soc. London 1904.
- Arhopala halmaheira*, Halmaheira, p. 233, *sublustris*, p. 234, *baluensis*, p. 235, Borneo, BETHUNE-BAKER, Ann. Nat. Hist. xiv, n. spp.
- Candalides pruina*, New Guinea, DRUCE, p. 140, Ann. Nat. Hist. xiii, n. sp.
- Castalius eusemia*, Victoria Nyanza, pl. i, fig. 11, p. 340, NEAVE, Nov. Zool. xi, n. sp.
- Catochrysops nandensis*, Africa, pl. i, fig. 12, p. 339, NEAVE, t. c. n. sp.
- Chrysophanus dispar* var. pl. iv, fig. 12, and ab. n. *nigrolineata*, p. 57, *dorilis* ab. n. *upoleuca*, p. 58, VERITY, Entomologist 1904; *C. gorgon*, eggs, larvæ, GRUNDEL, p. 97, Ent. News Philad. xv.
- Cupido malathana* var. n. *nilotica*, AURIVILLIUS, p. 3, Jägerskiöld exp. No. 8.
- Cyaniris ladon*, food-plant, FLETCHER, p. 4, Canad. Ent. xxvi.
- Deudorix leonina*, Sierra Leone, BETHUNE-BAKER, p. 231, Ann. Nat. Hist. xiv; *D. angelita*, Cameroons, SUFFERT, p. 54, Deutsche ent. Zeitschr. Iris xvii : n. spp.
- Eoöxylides tharis enganicus* subsp. n., FRUHSTORFER, p. 204, Berlin. ent. Zeitschr. xlix; *E. tharis* subspp. n., FRUHSTORFER, pp. 311, 312, Deutsche ent. Zeitschr. Iris xvi.
- Epitola mus, mercedes*, p. 53, *concepcion*, p. 54, Cameroons, SUFFERT, t. c. xvii, n. spp.
- Epitolina catori, dorothea*=(*Phytala leonina*), p. 227, *sublustris*, p. 228, *kholifa*, p. 229, *albomaculata, virginea*, p. 230, Sierra Leone, BETHUNE-BAKER, Ann. Nat. Hist. xiv, n. spp.
- Hypolycena ceculus obscurus* subsp. n., SUFFERT, p. 60, Deutsche ent. Zeitschr. Iris xvii.
- H. dolores*, E. Africa, SUFFERT, p. 57, t. c.; *H. ugandæ*, Africa, SHARPE, p. 203, Entomologist 1904; *H. moyambina*, Sierra Leone, BETHUNE-BAKER, p. 232, Ann. Nat. Hist. xiv : n. spp.
- Iaspis* n. g. for *Symmachia temesa*, Hew., KAYE, p. 196, Tr. ent. Soc. London 1904.
- Incisalia angustus*, larva, COOK, p. 136, Canad. Ent. xxxvi.
- Iolais silas lasius* subsp. n., SUFFERT, p. 70, Deutsche ent. Zeitschr. Iris xvii.
- I. barbara*, p. 62, *matilda*, p. 64, *elisa*, p. 65, *bertha*, p. 66, *thuraui*, p. 67, *emma*, p. 69, Africa, SUFFERT, t. c.; *I. hemicyanus*, Uganda, p. 203, *albomaculatus*, Toro, p. 204, SHARPE, Entomologist 1904; *I. catori*, Sierra Leone, BETHUNE-BAKER, p. 233, Ann. Nat. Hist. xiv : n. spp.
- Jacoona anasuja* varr., FRUHSTORFER, p. 310, Deutsche ent. Zeitschr. Iris xvi.
- Lampides telicanus*, ab. n. p. 58, *dämon* ab. n. *agraphomena*, p. 59, VERITY, Entomologist 1904.
- Larinpoda lagyra gyrala* subsp. n., SUFFERT, p. 49, Deutsche ent. Zeitschr. Iris xvii.
- L. emilia*, Cameroons, SUFFERT, p. 48, t. c. n. sp.
- Liptena angusta*, p. 50, *margarita*, p. 51, Cameroons, SUFFERT, t. c.; *L. albicans*, Sierra Leone, CATOR, p. 76, Ann. Nat. Hist. xiii; *L. diversa*, Sierra Leone, BETHUNE-BAKER, p. 225, Ann. Nat. Hist. xiv : n. spp.
- Lycæna ariana* var. *arene*, pl. ix, fig. 4, p. 137, *L. pheretes* var. *pharis*, fig. 5, p. 138, FAWCETT, P. Z. S. 1904, ii; *L. pseudargiolus* varr. n. *argentata, nigrescens*, FLETCHER, p. 213, Tr. R. Soc. Canad. ix, Sect. 4;

- L. pseudargiolus* varr. n. *argentata*, *nigrescens*, FLETCHER, p. 127, Canad. Ent. xxxvi; *L. cyllarus* var. n. *punctata*, GOUIN, pp. lxxi & lxxvi, Pr.-verb. Soc. Linn. Bordeaux lix; *L. arion* var. n., WAGNER, p. 1, Soc. ent. xix; *L. icarus* ab. *celina*, *escheri* ab. *rostagni*, *corydon* ab. *striata*, STEFANELLI, pp. 4, 5, Bull. Soc. ent. Ital. xxxvi; *L. escheri* var. n. *splendens*, id. t. c. p. 11; *L. corydon* ab. n. *stefanellii*, *L. bellargus* ab. n. *bellargoides*, VERITY, l. eod.; *L. zephyrus*, *calliopis* varr. pp. 16-19, pl. ii, figg. 15-18 & 21-24, Études comp. i; *L. coretas*, characters, JACHONTOV, pp. 96-100, cuts, and p. 218, Rev. Russe Ent. iv; *L. argiades*, life-history, FROHAWK, pp. 245-249, Entomologist 1904; *L. alcon*, habits and early stages, BRANTS, pp. 137-143, Tijdschr. Ent. xlvii.
- L. lerothodi*, Basutoland, TRIMEN, p. 242, pl. xix, fig. 6, Tr. ent. Soc. London 1904; *L. (Zizera) zera*, pl. ix, fig. 6, p. 138, *L. (Niphanda) marcia*, fig. 7, p. 139, Tounghoo, FAWCETT, P. Z. S. 1904, ii : n. spp.
- Lycænesthes affinis* n. n. for *modestus* Waterh., WATERHOUSE & TURNER, p. 801, P. Linn. Soc. N. S. Wales 1904.
- L. hobleyi*, Victoria Nyanza, NEAVE, p. 339, Nov. Zool. xi, n. sp.
- Macusia* n. g. for *Thecla satyroides* Hew., KAYE, p. 198, Tr. ent. Soc. London 1904.
- Micropentila mabangi*, Sierra Leone, BETHUNE-BAKER, p. 226, Ann. Nat. Hist. xiv, n. sp.
- Neolucia* n. g. type *Lycæna agricola* Westw., WATERHOUSE & TURNER, p. 803, P. Linn. Soc. N. S. Wales 1904.
- Nesolycæna* n. g. type *Holochila albosericea* Misk., WATERHOUSE & TURNER, t. c. p. 801.
- Oxylides feminina*, Uganda, SHARPE, p. 202, Entomologist 1904, n. sp.
- Paiwarra* n. g. for *Pap. venulius* Cr., KAYE, p. 199, Tr. ent. Soc. London 1904.
- Parachrysops* n. g. *bicolor* n. sp., New Guinea, BETHUNE-BAKER, p. 369, Nov. Zool. xi.
- Paralucia* n. g. type *L. pyrodiscus* Ros., WATERHOUSE & TURNER, p. 802, P. Linn. Soc. N. S. Wales 1904.
- Paraphnæus* n. g. for *Aphnæus hutchinsoni*, THIERRY-MIEG, p. 140, Naturaliste 1904.
- Parelodina* n. g. near *Candalides*, *P. aroa* n. sp., New Guinea, BETHUNE-BAKER, p. 368, Nov. Zool. xi.
- Pentila*, subsp. n., SUFFERT, pp. 46, 47, Deutsche ent. Zeitschr. Iris xvii.
- P. hedwiga*, *marianna*, p. 43, *christina*, p. 45, *elfrieda*, p. 46, Africa, SUFFERT, t. c. n. spp.
- Philiris* merged in *Candalides*, BETHUNE-BAKER, p. 369, Nov. Zool. xi.
- Polyniphes* n. g. for *Thecla dumenilii* God., KAYE, p. 191, Tr. ent. Soc. London 1904.
- Polyommatus admetus rippartii*, oviposition and egg, POWELL, pp. 92-94, Ent. Rec. xvi.
- Poultonia* n. g. near *Durbania*, *P. ochracea* n. sp., Victoria Nyanza, pl. i, fig. 13, NEAVE, p. 336, Nov. Zool. xi.
- Purlisa gigantea borneana* subsp. n., FRUHSTORFER, p. 310, Deutsche ent. Zeitschr. Iris xvi.
- Pseuderesia moyambina*, p. 224, *catori*, p. 225, Sierra Leone, BETHUNE-BAKER, Ann. Nat. Hist. xiv; *P. bakeriana*, p. 73, *nigra*, p. 74, *fusca*, p. 75, Sierra Leone, CATOR, Ann. Nat. Hist. xiii; *P. carlota*, Cameroons, SUFFERT, p. 47, Deutsche ent. Zeitschr. Iris xvii.
- Rekoa* n. g. for *Pap. meton* Cr., KAYE, p. 198, Tr. ent. Soc. London 1904.
- Siderus* n. g. *S. parvinotus* n. sp., Trinidad, KAYE, p. 195, t. c.
- Spindasis nairobiensis*, Africa equat., SHARPE, p. 133, Entomologist 1904, n. sp.

- Stugeta maria*, Angola, SUFFERT, p. 60, Deutsche ent. Zeitschr. Iris xvii, n. sp.
- Syntaruchoides* n. g. for *Papilio cassius* Cr., KAYE, p. 190, Tr. ent. Soc. London 1904.
- Tajuria lucullus, stigmata*, Borneo, DRUCE, p. 141, Ann. Nat. Hist. xiii, n. spp.
- Talicada nyseus* var., GREEN, p. 77, Spolia Zeylan. ii.
- Telipna acraea nigra* subsp. n., SUFFERT, p. 42, Deutsche ent. Zeitschr. Iris xvii.
- T. erica*, Cameroons, SUFFERT, p. 41, t. c.; *T. nyanza*, Africa, pl. i, fig. 19, p. 335, NEAVE, Nov. Zool. xi : n. spp.
- Thamala* etc., Indo-Australian subsp. n., FRUHSTORFER (566).
- Thecla strigosa* var. n. *liparops*, FLETCHER, p. 124, cuts, Canad. Ent. xxxvi, and FLETCHER, p. 210, Tr. R. Soc. Canad. ix, sect. 4; *T. critola*, sexes, DYAR, p. 39, J. N. York Ent. Soc. xii; *T. acaciæ* ab. n. *beccarii*, pl. iv, fig. 11, p. 56, VERITY, Entomologist 1904.
- T. ostar*, Arizona, DYAR, p. 40, J. N. York Ent. Soc. xii; *T. heathii*, Manitoba, FLETCHER, p. 125, Canad. Ent. xxxvi, and FLETCHER, p. 212, Tr. R. Soc. Canada ix, sect. 4; *T. johnsoni*, Brit. Columbia, SKINNER, p. 298, Ent. News Philad. xv; *T. subobscura, dominicana*, Dominica, LATHY, p. 452, P. Z. S. 1904, i : n. spp.
- Thestor ballus*, early stages, CHAPMAN, p. 254-260, 277-284, pls. xi-xiii, Ent. Rec. xvi.
- Thysonotis hebes*, New Guinea, DRUCE, p. 140, Ann. Nat. Hist. xiii, n. sp.
- Tmolus unilinea*, p. 192, *perdistincta*, p. 194, pl. xviii, fig. 8, Trinidad, KAYE, Tr. ent. Soc. London 1904, n. spp.
- Zeritis thysbe* var. pl. xix, fig. 3, p. 236, *Z. molomo* redescribed, p. 238, fig. 4, *Z. damarensis*, fig. 5, p. 240, TRIMEN, Tr. ent. Soc. London 1904.
- Z. felthami*, Cape G. H., TRIMEN, p. 233, pl. xix, fig. 2, t. c. n. sp.
- Zizera otis* var., GREEN, p. 77, cut, Spolia Zeylan. ii.

HESPERIIDÆ.

[Cf. DYAR (420, 422), FLETCHER (515, 516), FRUHSTORFER (568), GRINNELL (634), KAYE (775), MABILLE (898), NEAVE (977), SWINHÖE (1364), TRIMEN (1394), WATERHOUSE (1493).]

WATERHOUSE (1493) criticises Mabilie's work regarding Australian *Hesperiidæ*, and gives a list of corrigenda as to habitats and synonymy, for which reference must be made to the paper itself.

- Acromectis* n. g. *neander* Plötz, MABILLE, p. 171, Hesperiidæ.
- Aella* n. g. *dryops* Mab., MABILLE, p. 140, Hesperiidæ.
- Arotis* n. g. *strene* n. sp., Brazil, MABILLE, p. 151, Hesperiidæ.
- Asbolis* n. g. *sandarac* H.-Sch., MABILLE, p. 134, Hesperiidæ.
- Bibla* n. g. near *Taractrocera*, MABILLE, p. 122, Hesperiidæ.
- Chloeria* n. g. *psittacina* Feld., MABILLE, p. 178, Hesperiidæ.
- Chondrolepis* n. g. *murga* Mab., MABILLE, p. 170, Hesperiidæ.
- Corone oceanica*, Oceania, *tenebricosa*, New Guinea, MABILLE, p. 143, Hesperiidæ, n. spp.
- Cyclopides trisignatus*, Victoria Nyanza, pl. i, fig. 8, p. 343, NEAVE, Nov. Zool. xi, n. sp.
- Dalla* n. g. for part of *Butleria*, Wats., MABILLE, p. 107, Hesperiidæ.
- Hasora attenuata*, New Guinea, MABILLE, p. 86, Hesperiidæ, n. sp.
- Heliopetes concinnata*, Brazil, MABILLE, p. 79, Hesperiidæ, n. sp.
- Ismene tolo*, Celebes, MABILLE, p. 89, Hesperiidæ, n. sp.
- Kedestes tacusa*, pl. xx, fig. 8, p. 245, TRIMEN, Tr. ent. Soc. London 1904.
- Leptalina* n. g. near *Heteropterus*, MABILLE, p. 110, Hesperiidæ.

- Malaza n. g. carmides* Hew., MABILLE, p. 95, Hesperiidæ.
Manarina n. g. empyreus Mab., MABILLE, p. 95, Hesperiidæ.
Melanthes n. g. for brunnea H.-Sch., MABILLE, p. 80, Hesperiidæ.
Ocybadistes suffusus, Australia, MABILLE, p. 142, Hesperiidæ, **n. sp.**
Edaloneura n. g. heterochrus Mab., MABILLE, p. 101, Hesperiidæ.
Enides n. g. vulpina Feld., MABILLE, p. 178, Hesperiidæ.
Oxytoxia n. g. doubledayi Westw., MABILLE, p. 93, Hesperiidæ.
Padraona suborbicularis, Australia, MABILLE, p. 141, Hesperiidæ, **n. sp.**
Pamphila manitoboides, Canada, FLETCHER, p. 128, *Canad. Ent. xxxvi*, and
 FLETCHER, p. 214, *Tr. R. Soc. Canada ix*, sect. 4, **n. sp.**
Parnara nostrodamus, habits, egg and larva, VÉRITY, p. 233, *Bull. Soc. ent. France 1904*.
Perichares heroni, Trinidad, KAYE, p. 221, *Tr. ent. Soc. London 1904*, **n. sp.**
Psoralis n. g. sabæus n. sp., Bolivia, MABILLE, p. 133, Hesperiidæ.
Pyrrhochalcia n. g. iphis Drury, MABILLE, p. 89, Hesperiidæ.
Sarega n. g. staurus n. sp., Colombia, MABILLE, p. 133, Hesperiidæ.
Serdis n. g. flagrans n. sp., Ecuador, MABILLE, p. 144, Hesperiidæ.
Staphylus sinepunctis, Trinidad, KAYE, p. 215, *Tr. ent. Soc. London 1904*,
n. sp.
Stomyles gallio, pupillatus, S. America, MABILLE, p. 132, Hesperiidæ
n. spp.
Synale n. g. hylaspes Cr., MABILLE, p. 159, Hesperiidæ.
Synapte n. g. salenus Mab., MABILLE, p. 133, Hesperiidæ.
Tagiades bubasa, N. Guinea, p. 418, *hovia*, Shortland islds., Sivoa, N. Guinea,
 p. 419, SWINHOE, *Ann. Nat. Hist. xiv*, **n. spp.**
Telicota insularis kreon subsp. n., FRUHSTORFER, p. 166, *Berlin. ent. Zeitschr. xlix*.
T. androstenes, Lompa Battan, FRUHSTORFER, p. 165, pl. i, fig. 6, t. c.;
T. hypomelena, New Guinea, MABILLE, p. 148, Hesperiidæ : **n. spp.**
Thanaos lilius, Brit. Columbia, DYAR, p. 788, *P. U. S. Mus. xxvii*; *T. calli-*
idus, S. California, GRINNELL, p. 114, *Ent. News Philad. xv* : **n. spp.**
Thorybes mysie, Arizona, DYAR, p. 40, *J. N. York Ent. Soc. xii*, **n. sp.**
Thracides joannisii, Chiriqui, *phidonides*, Ecuador, MABILLE, p. 179, Hes-
 periidæ, **n. spp.**
Triadusa n. g. milvius n. sp., Brazil, MABILLE, p. 144, Hesperiidæ.
Vehilius subplanus, Trinidad, KAYE, p. 216, *Tr. ent. Soc. London 1904*,
n. sp.
Zenida n. g. abdon Plötz, MABILLE, p. 160, Hesperiidæ.
Zophopetes n. g. dysmephila Tr., MABILLE, p. 183, Hesperiidæ.

HETEROCERA.

Corrections of nomenclature etc. in Holland's moth book, *Canad. Ent. xxxvi*, pp. 25 etc. : and also in *Ent. News Philad. xv*, pp. 104-106 etc.

CASTNIIDÆ (Vacant) and SPHINGIDÆ.

[Cf. DYAR (420), GRIEP (629), HAMPSON (654), KUSNEZOV (849), OBERTHÜR (987-989) ROTHSCCHILD (1195), TUTT (1413), WEBSTER (1500).]

TUTT's Vol. iv of British *Lepidoptera* is devoted to *Sphingidæ* and includes a catalogue of palaearctic forms.

TUTT, *Ent. Rec. xvi*, pp. 5 etc., etc., reviews Rothschild's and Jordan's work of last year, making many remarks on classification and nomenclature.

Review of ROTHSCCHILD & JORDAN's monograph, SEITZ, pp. 324-330, *Deutsche ent. Zeitschr. Iris xvi*.

- Variation, geographical distribution and antiquity with special reference to *Smerinthus*, GRIEF, pp. 89-129, plate, Helios xxi.
- Distribution in North America, WEBSTER, pp. 65-69, Canad. Ent. xxxvi.
- Descriptive notes on Japanese *Sphingidæ* with figg. of larvæ, NAGANO, Insect World, Vols. vii, viii.
- Development of ocellated spots, larva of *Deilephila nerii*, and *Pergesa porcellus*, KUSNEZOV, Rev. Russe Ent. iv, pp. 154-162, cuts.
- Acanthosphinx gussfeldti*, larva and pupa, AURIVILLIUS, p. 43, Arkiv Zool. ii, No. 4.
- Celerio*, varr. and hybrids of European, pp. 26-42, pls. v and vi, OBERTHÜR, Études comp. i.
- Daphnis nerii*, larva and pupa, DOLLMAN, p. 37, pl. i, Ent. Rec. xvi.
- Deilephila livornica lineata* in Algeria, larvæ variation, GIARD, pp. 203-206, Bull. Soc. ent. France 1904.
- Epistor boisduvali* (= *camertus* Boisd. nec Cr.), OBERTHÜR, p. 77, Bull. Soc. ent. France 1904; *E. bathus*, Peru, ROTHSCCHILD, p. 436, Nov. Zool. xi: n. spp.
- Hemaris diffinis thetis*, early stages, DYAR, p. 788, P. U. S. Mus. xxvii.
- Lepchina* n. g. near *Acosmeryx*, *L. tridens* n. sp., Darjeeling, OBERTHÜR, p. 76, Bull. Soc. ent. France 1904.
- Lepisesia flavofasciata*, early stages, DYAR, p. 790, P. U. S. Mus. xxvii.
- Macroglossum augavra*, New Guinea, ROTHSCCHILD, p. 438, Nov. Zool. xi, n. sp.
- Manduca atropos* varr., BURROWS, p. 137, pl. iii, Ent. Rec. xvi.
- Marumba nympha* ♂, pl. d, fig. 17, p. 640, HAMPSON, J. Bombay Soc. xv.
- Nephele discifera* f. *ratrayi* nov., ROTHSCCHILD, p. 436, Nov. Zool. xi.
- Polyptychus murinus*, Congo, ROTHSCCHILD, p. 435, t. c. n. sp.
- Rhagastis jordani*, Siao-Lou, C. OBERTHÜR, p. 14, Bull. Soc. ent. France 1904, n. sp.
- Smerinthus*, a gynandromorphic hybrid, GILLMER, p. 140, Allg. Zeitschr. Ent. ix; *S. ocellatus* and *populi*, hybridisation, ARKLE, p. 25, Entomologist 1904; *S. tremula*, note, SLEVOGT, p. 19, Soc. ent. xix.
- Sphingonæpiopsis ansorgei*, Angola, ROTHSCCHILD, p. 438, Nov. Zool. xi, n. sp.
- Temnora elegans polia* subsp. n., ROTHSCCHILD, p. 437, t. c.
- T. albilinea*, Angola, p. 436, *ratrayi*, Uganda, p. 437, ROTHSCCHILD, t. c. n. spp.
- Theretra polistratus*, New Guinea, ROTHSCCHILD, p. 440, t. c. n. sp.
- Xylophanes ockendeni*, p. 439, *rhodotus*, p. 440, Peru, ROTHSCCHILD, t. c.; *P. nabuchodonosor*, Bolivia, OBERTHÜR, p. 78, Bull. Soc. ent. France 1904 : n. spp.

SESIIDÆ.

- Bembecia marginata* var. *albicoma*, ENGEL, p. 68, Ent. News Philad. xv.
- Parharmonica piceæ*, Washington, DYAR, p. 106, P. ent. Soc. Washington vi, n. sp.
- Sesia doryliiformis* ab. n. *unicolor*, RAGUSA, p. 114, Nat. Sicil. xvii; *S. typhæiformis*, gall?, TROTTER, p. 83, Marcellia iii; *S. acerni*, habits, ENGEL, p. 71, Ent. News Philad. xv.
- S. jakuta*, Lena, HERZ, p. 19, Ofv. Finska Forh. xlv, No. 15, n. sp.

BOMBYCES

(*s. l.*, including *Chalcosiidæ*, *Psychidæ*, *Hepialidæ*, *Cossidæ*, *Agaristidæ*, and various families of more or less doubtful position. *Uraniidæ* and *Epiplemidæ*, see *Geometridæ*; *Cymatophoridæ*, see *Geometridæ*; *Thyrididæ*, see *Pyralidæ*).*

[Cf. AURIVILLIUS (60, 62), BARNES (88), BARTEL (90), BETHUNE-BAKER (116), CHAPMAN (259), DEEGENER & SCHAPOchnikow (359), DOGNIN (398-401), DRUCE (406), DYAR (422, 427, 428, 431, 432, 435), FEDERLEY (493), HAMPSON (653, 654), HEYLAERTS (682), HEYN (685), JOANNIS (763), JORDAN (771), LITTLER (885), MARSHALL (916), OBERTHÜR (987), PACKARD (1007), PETERSEN (1034), PIEPERS & SNELLEN (1084, 1085), PÜNGELER (1111), REBEL (1121), ROTHSCHILD (1194, 1198), SCHAUUS (1225), STEBBING (1337), SWINHOE (1361, 1363, 1364), TschETTERIKOV (1400), TURNER (1411, 1412), WARREN (1475).]

Synbombycina n. superfam. for *Brakmaeidae*, *Bombycidae*, *Endromidae*, *Lasiocampidae*, *Liparidae* and *Eupterotidae*, PACKARD, P. Amer. Ac. xxxix, p. 578.

Classification of *Saturniidae*, AURIVILLIUS, pp. 15-27, with synopsis of larvæ and pupæ, Arkiv Zool. ii, No. 4.

Cossidae, notes on characters, on larval tubercles and on position of *Culama expressa*, QUAIL, pp. 93-97, pl. v, Entomologist 1904.

Australian *Lymantriidae*, in which is included *Aganaiidae*, TURNER, pp. 469-481, Tr. ent. Soc. London 1904.

The *Syntomidae* of Java, with descriptions of larvæ, PIEPERS & SNELLEN, pp. 43-62, Tijdschr. Ent. xlvii.

The vegetable caterpillar, *Cordyceps* and *Hepialidae*, KIRBY, Nature lxx, p. 44.

Acatapaustus n. g. *Nolinae*, *A. basifusca*, pl. vi, fig. 25, p. 415, *ekeikei* fig. 20, p. 416, n. spp., New Guinea, BETHUNE-BAKER, Nov. Zool. xi.

Acco n. g. *Lithosiine*, *A. bicolora*, pl. v, fig. 21, n. sp., New Guinea, BETHUNE-BAKER, p. 418, t. c.

Adelocephala citrina, Parana, SCHAUUS, p. 142, Tr. Amer. ent. Soc. xxx; *A. nisa*, Peru, p. 242, *hodova*, *eugenia*, Guiana, *smithi*, Colombia, p. 243, *yucatan*, Yucatan, *lineata*, Paraguay, p. 244, DRUCE, Ann. Nat. Hist. xiii : n. spp.

Adoneta spinuloides=(*leucosigma* Pack.), DYAR, p. 43, J. N. York ent. Soc. xii; *A. bicaudata*, N. America, id. l. c. n. sp.

Æolosia atropunctata var. *alba*, pl. xi, fig. 2, p. 155, SNELLEN, Tijdschr. Ent. xlvii.

Æthria innotata, Petropolis, SCHAUUS, p. 135, Tr. Amer. ent. Soc. xxx, n. sp.

Afilia oslari, Arizona and Mexico, DYAR, p. 64, P. ent. Soc. Washington vi, n. sp.

Aganais speciosa, larva, cuts, and pupa, AURIVILLIUS, p. 38, Arkiv Zool. ii, No. 4.

Agonis dymus, Fergusson Is., SWINHOE, p. 155, Tr. ent. Soc. London 1904, n. sp.

Agylla hampsoni, Peru, DOGNIN, p. 358, Ann. Soc. ent. Belgique xlviii, n. sp.

* Owing to diversity of opinion as to position of *Chalcosiidæ*, *Epiplemidæ*, both *Bombyces* and *Geometridæ* should be inspected as regards these insects. As regards *Cymatophoridæ*, *Thyatiridæ*; *Noctuidæ* should also be looked through as well as *Bombyces* and *Geometridæ*.

- Altha maculata*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, n. spp.
Amata Fabr. prior to *Syntomis* Ochs., PROUT, p. 116, Entomologist 1904.
Anadiasa n. n. for *Nadiasa* Auriv. nec Walker, AURIVILLIUS, p. 8, Jägerskiöld exp. No. 8.
Anaphe reticulata, parasite, CAMERON, p. 191, Zeitschr. Hym. Dipt. iv.
Anaxia lysandra, N. Peru, DRUCE, p. 242, Ann. Nat. Hist. xiii; *A. martha*, Peru, DOGNIN, p. 55, Naturaliste 1904 : n. spp.
Antarctia pallidivena, Parana, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, n. sp.
Anthela ekeikei, New Guinea, BETHUNE-BAKER, p. 403, Nov. Zool. xi; *A. symphona*, Tasmania, p. 480, *achromata*, Queensland, p. 481, TURNER, Tr. ent. Soc. London 1904 : n. spp.
Antheraea yamamai, young larva, PACKARD, p. 569, P. Amer. Ac. xxxix.
Apaleodes pudefacta, Arizona and Mexico, DYAR, p. 42, J. N. York Ent. Soc. xii; *A. uwada*, Arizona, BARNES, p. 264, Canad. Ent. xxxvi; *A. mehida*, *signata*, p. 246, *banepa*, p. 247, Peru, DRUCE, Ann. Nat. Hist. xiii : n. spp.
Apantesis bicolor, Bahamas, HAMPSON, p. 166, Ann. Nat. Hist. xiv, n. sp.
Apisa sjostedti, Cameroons, AURIVILLIUS, p. 28, Arkiv Zool. ii, No. 4, n. sp.
Archylus tener, generic characters, DYAR, p. 65, P. ent. Soc. Washington vi.
Arctia villica varr., WINTERSTEIN, p. 7, pl. iv, Deutsche ent. Zeitschr. Iris xvii; *A. flava* varr., LOREZ, p. 123, Soc. ent. xix; *A. maculosa* var. n. *sojota*, TSCHETVERIKOV, p. 79, Rev. Russe Ent. iv; *A. caja*, 1542 eggs, OUDEMANS, p. 95, Ent. Ber. Nederland. i.
Arguda erectilinea, Singapore, SWINHÖE, p. 152, Tr. ent. Soc. London 1904; *A. pratti*, New Guinea, pl. iv, fig. 33, BETHUNE-BAKER, p. 395, Nov. Zool. xi : n. spp.
Argyrolepida æqualis, *capens integra*, subspp. n., JORDAN, p. 446, Nov. Zool. xi.
Argyrostigma n. g. for *Lymantria niobe* Weym., AURIVILLIUS, Arkiv Zool. ii, No. 4.
Arhacia fascis, valid, SCHAUS, p. 145, Tr. Amer. ent. Soc. xxx.
A. meridionalis, Brit. Guiana, id. l. c. n. sp.
Arsenuva richardsoni, larva, PACKARD, p. 73, Canad. Ent. xxxvi.
Asura lutara, larva, pl. x, fig. 10, p. 157, *A. senara*, larva, p. 159, *semicirculata*, larva, pl. x, fig. 11, p. 160, *eos*, larva, fig. 12, *uniformeola*, larva, p. 16, PIEPERS, Tijdschr. Ent. xlvii.
A. ochreomaculata, pl. v, fig. 26, *flaveola*, fig. 22, p. 424, *brunneofasciata*, fig. 24, *unicolora*, fig. 25, *sagittaria*, fig. 23, p. 425, *rosacea*, *dinawa*, fig. 38, *aroa*, fig. 37, p. 426, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, n. spp.
Asuridia ridibunda, Batavia, pl. xi, fig. 5, p. 156, larva, pl. x, fig. 9, PIEPERS & SNELLEN, Tijdschr. Ent. xlvii, n. sp.
Athletes steindachneri, East Africa, REBEL, p. 64, pl. ii, Ann. Hofmus. Wien xix, n. sp.
Attacus atlas subspp. n., FRUHSTORFER, pp. 283-290, Ent. Meddel. ii; *A. atlas* varr. n., FRUHSTORFER, p. 169, Soc. ent. xviii; *A.*, notes, PACKARD, p. 5, Ent. News Philad. xv.
A. vibidia, Tucuman, DRUCE, p. 244, Ann. Nat. Hist. xiii, n. sp.
Automeris pygmæa, Parana, SCHAUS, p. 141, Tr. Amer. ent. Soc. xxx, n. sp.
Automolis dolens, Paraguay, DRUCE, p. 241, Ann. Nat. Hist. xiii, n. sp.
Axiologa n. g. *Lymantriidæ* for *pura* Luc., TURNER, p. 477, Tr. ent. Soc. London 1904.
Birthama plagioscia = (*Doratiphora aspidophora* Low.), TURNER, p. 241, Tr. R. Soc. S. Austral. xxviii.
B. leucosticta, *dochmographa*, Queensland, TURNER, t. c.; *B. basibrunnea*,

- E. Africa*, SWINHOE, p. 154, Tr. ent. Soc. London 1904; *B. dinawa*, New Guinea, pl. v, fig. 33, BETHUNE-BAKER, p. 385, Nov. Zool. xi : **n spp.**
- Bombyx mori*, primitive form *Theophila mandarina*, DEMAISON, p. 109, Bull. Soc. ent. France 1904; *B. mori*, number of eggs, their fertility etc., GAL, Bull. Soc. Nîmes xxxi, pp. 37-43.
- Brahmæ japonica*, egg, larva, affinities, PACKARD, pp. 570-578, P. Amer. Ac. xxxix.
- Burgena splendida pectoralis* subsp. n., JORDAN, p. 444, Nov. Zool. xi.
- Byrsia aurantiaca*, larva, PIEPERS, p. 148, Tijdschr. Ent. xlvii; *B. amæna guizonis* subsp. n., JORDAN, p. 443, Nov. Zool. xi.
- Caligula japonica*, life-history, PACKARD, pp. 564-568, P. Amer. Ac. xxxix.
- Callimorpha dominula*, var. from feeding, ZANG, p. 224, Allg. Zeitschr. Ent. ix.
- C. coccinea*, Borneo, SWINHOE, p. 151, Tr. ent. Soc. London 1904, **n. sp.**
- Callosamia calleta*, life-history, PACKARD, pp. 547-551, P. Amer. Ac. xxxix.
- Camerinia ? flava*, Zomba, pl. xxxiii, figg. 5, 6, p. 697, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Caprimina cerulescens mononis* subsp. n., JORDAN, p. 443, Nov. Zool. xi.
- C. choiseuli*, Solomon islds, id. t. c. **n. sp.**
- Cascera bella*, New Guinea, pl. v, fig. 44, BETHUNE-BAKER, p. 374, Nov. Zool. xi, **n. sp.**
- Caviria dinawa*, New Guinea, BETHUNE-BAKER, p. 397, t. c. **n. sp.**
- Celama fuscibasis*, pl. v, fig. 42, *aroa*, figg. 39, 41, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
- Ceramidia butleri*, carried to British Columbia, COCKLE, p. 204, Canad. Ent. xxxvi.
- Cerura australis* var. = (*multipunctata* Bak.), TURNER, p. 833, P. Linn. Soc. N. S. Wales 1904.
- C. multipunctata*, New Guinea, pl. vi, fig. 9, BETHUNE-BAKER, p. 381, Nov. Zool. xi, **n. sp.**
- Ceryx subformicina*, *aroa*, p. 382, *swinhoei*, p. 383, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Chalcosia viridisuffusa*, Borneo, SWINHOE, p. 155, Tr. ent. Soc. London 1904, **n. sp.**
- Chalia laminati*, Tonkin, HEYLAERTS, p. 419, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Chelura hemileuca*, New Guinea, pl. iii, fig. 25, p. 322, ROTHSCILD, Nov. Zool. xi.
- Chionæma trigutta*, larva, *C. rejecta* = (*Lexis bipunctigera* Walk.), AURIVILLIUS, p. 35, Arkiv Zool. ii, No. 4; *C. javanica*, larva, pl. x, fig. 6, p. 151, *pitana*, larva, fig. 7, p. 153, *bianca*, larva, fig. 8, p. 154, PIEPERS, Tijdschr. Ent. xlvii.
- C. affinis*, Java, pl. xi, fig. 1, p. 152, SNELLEN, t. c.; *C. albomaculata*, pl. iv, fig. 35, p. 422, *aroa*, *brunnea*, *dinawa*, *charybdis*, pl. v, fig. 27, p. 423, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Chliara notha* to *Hapigia*, SCHAUS, p. 149, Tr. Amer. ent. Soc. xxx.
- Chondrostege constantina*, p. 53, pl. iv, figg. 46, 53, OBERTHÜR, Études comp. i.
- Chrysægla bipunctata*, New Guinea, pl. vi, fig. 26, BETHUNE-BAKER, p. 420, Nov. Zool. xi, **n. sp.**
- Chrysopoloma crawshayi*, E. Africa, pl. xxxiii, fig. 8, p. 699, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Chrysoscota flavostrigata*, New Guinea, BETHUNE-BAKER, p. 417, Nov. Zool. xi, **n. sp.**
- Citheronia brissoti*, metamorphosis, GALLARDO, p. 268, Bull. Soc. ent. France 1904.

- Clania lewinii*, habits, oviposition etc., LITTLER, pp. 310–315, Entomologist 1904.
- Clemensia albata*, early stages, DYAR, p. 793, P. U. S. Mus. xxvii.
- Cleolusia aroa*, New Guinea, pl. vi, fig. 29, BETHUNE-BAKER, p. 424, Nov. Zool. xi, **n. sp.**
- Clerckia securizonis guizonis* subsp. n., JORDAN, p. 442, Nov. Zool. xi.
- Clisiocampa americana*, natural history, SURFACE (1356); *C. americana*, no. of eggs, GIRAULT, p. 2, Ent. News Philad. xv.
- Cnethocampa pityocampa*, experiments on larva, ROCQUIGNY-ADANSON, Feuille Natural. xxxiv, pp. 186, 187.
- Contheyla lola, brunnea*, Borneo, SWINHOE, p. 153, Tr. ent. Soc. London 1904; *C. pratti*, pl. v, fig. 46, *ekeikei*, p. 385, *birthama*, p. 386, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Correbidia apicalis*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxxvi, **n. sp.**
- Cossus cossus*, larval habit, SCHUSTER, p. 283, Zool. Garten xlv.
- C. tropicalis*, Brit. Guiana, SCHAUS, p. 142, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Cricula trifenestrata*, note, BOUVIER, p. 254, Bull. Soc. ent. France 1904.
- Ctenucha albolineata*, N. Peru, DRUCE, p. 241, Ann. Nat. Hist. xiii; *C. projecta*, Peru, DOGNIN, p. 67, Naturaliste 1904; *C. annulata*, Bolivia, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Cyanopepla samarca*, Bolivia, SCHAUS, p. 135, t. c. **n. sp.**
- Cycethra n. g. Lasiocampidae, C. aroa n. sp.*, New Guinea, BETHUNE-BAKER, p. 393, Nov. Zool. xi.
- Dahana cubana*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Dasychira*, larvae of W. African, and notes, AURIVILLIUS, pp. 57–60, Arkiv Zool. ii, No. 4.
- D. angelus*, Mongolia, TSCHETVERIKOV, p. 77, Rev. Russe Ent. iv; *D. pulchripes*, p. 58, *cameruna*, p. 59, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4; *D. hieroglyphica*, p. 144, *libella, bergmannii*, p. 145, *ila*, p. 146, Ashanti, SWINHOE, Tr. ent. Soc. London 1904; *D. subnigra*, pl. vi, fig. 41, *subnigropunctata*, fig. 40, *brunnea*, fig. 30, p. 404, *minor*, fig. 27, *kenricki*, pl. iv, fig. 27, p. 405, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Dasychiroides n. g. Lymantriidae*, p. 405, *obsoleta*, pl. vi, fig. 43, *nigrostrigata*, fig. 28, *pratti*, fig. 7, p. 406, *bicolora*, fig. 6, *brunneostrigata*, fig. 8, p. 407, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.
- Deilemema*, synonymy and taxonomy, pp. 39, 40 = (*Xylecata* Sw.), p. 41, *D. simplex*, larva, cuts, p. 41, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- D. hemixantha*, Cameroons, AURIVILLIUS, p. 41, t. c., *D. ratrayi*, Uganda, SWINHOE, p. 147, Tr. ent. Soc. London 1904; *D. eddela*, Eugano, SWINHOE, p. 420, Ann. Nat. Hist. xiv; *D. kebea*, pl. vi, fig. 36, *dinawa*, fig. 37, p. 411, *pratti*, fig. 38, p. 412, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Dendrolimus pini* and allies, synonymy, *D. segregatus*, distinct by genitalia, PETERSEN, pp. 163–166, Rev. Russe Ent. iv.
- Diacrisia sanio* var. *n. caucasica*, SCHAPOSCHNIKOV, p. 253, Annuaire Mus. St. Petersb. ix; *D. kasloa*, early stages, DYAR, p. 794, P. U. S. Mus. xxvii.
- D. pratti*, pl. iv, fig. 23, p. 412, *dinawa*, fig. 25, *kebea*, fig. 24, p. 413, New Guinea, BETHUNE-BAKER, Nov. Zool. xi; *D. kasloa*, Kootenay, DYAR, p. 18, P. ent. Soc. Washington vi : **n. spp.**
- Dicentria ravana*, San Salvador, *D. ? hertha*, Tucuman, DOGNIN, p. 116, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Dicranura vinula*, larval cannibalism, ZANG, p. 225, Allg. Zeitschr. Ent. ix; *D. himalayana*, larva, HAMPSON, p. 150, J. Bombay Soc. xvi.
- Dinawa n. g. Limacodidae, D. rufa*, pl. v, fig. 32, *nigricans*, fig. 11, **n. spp.**, New Guinea, BETHUNE-BAKER, p. 386, Nov. Zool. xi.
- Diversosexus n. g. Lymantriidae*, p. 402, *D. bicolor*, pl. vi, fig. 4, *aroa*, fig. 3, p. 403, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.

- Doratifera unicolora*=(*stenora* Turn.), TURNER, p. 241, Tr. R. Soc. S. Austral. xxviii; *D. casta*, larva, RAINBOW, p. 253, pl. xxix, Rec. Austral. Mus. v.
- Duomitus leuconotus*, habits, life-history, STEBBING, pp. 25-30, J. Asiat. Soc. Bengal lxxiii, part 2.
- D. benestriata*, Bahamas, HAMPSON, p. 180, Ann. Nat. Hist. xiv, n. sp.
- Dysauxes punctata* var. n. *ragusaria*, ZICKERT, p. 97, Nat. Sicil. xvii.
- Eilema pulverosa*, Cameroons, AURIVILLIUS, p. 34, Arkiv Zool. ii, No. 4, n. sp.
- Eligma* referred to *Arctiidae*, *E. hypsoides*, larva, p. 36, *E. duplicata*, larva and pupa, cuts, p. 37, AURIVILLIUS, t. c.
- Elysius barnesi*, Cuba, *systron*, PARANA, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx, n. spp.
- Entometa spodopa*, *plinthopa*, Queensland, TURNER, p. 239, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Eohemera* n. g. for *Nyctemera fulleri* Druce, AURIVILLIUS, p. 42, Arkiv Zool. ii, No. 4.
- Epanaphe* n. g. for *moloneyi* Dr. and *carteri* Walsingh., AURIVILLIUS, p. 8, t. c.; *E. clarilla*, Mashonaland, pl. xxxiii, fig. 10, p. 699, AURIVILLIUS, Tr. ent. Soc. London 1904, n. sp.
- Epipyrops navai*, Japan, DYAR, p. 19, P. ent. Soc. Washington vi, n. sp.
- Eragisa viridis*, Rio Janeiro, *E. ? sabulosa*, Chiriqui, SCHAUS, p. 144, Tr. Amer. ent. Soc. xxx, n. spp.
- Eriogaster philippii*, Haifa, BARTEL, p. 10, Deutsche ent. Zeitschr. Iris xvii, n. sp.
- Eucereon cubensis*, *irrorata*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, n. spp.
- Euchromia lethe*, larva, AURIVILLIUS, p. 33, Arkiv Zool. ii, No. 4.
- Eucyane gundlachia*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, n. sp.
- Eugoa tricolora*, pl. v, fig. 13, *confusa*, fig. 12, New Guinea, BETHUNE-BAKER, p. 427, Nov. Zool. xi, n. spp.
- Eunotela moqui*, Arizona, BARNES, p. 266, Canad. Ent. xxxvi, n. sp.
- Euprepia pudica*, stridulation, POWELL, p. 327, Ent. Rec. xvi.
- Euproctilla* n. g. near *Euproctis*, *E. insignis*, *E. ? disjuncta* n. spp., Cameroons, AURIVILLIUS, p. 54, Arkiv Zool. ii, No. 4.
- Euproctis lyoma*, Cameroons, SWINHÖE, p. 131, Ann. Nat. Hist. xiv; *E. sjostedti*, *rubroguttata*, Cameroons, AURIVILLIUS, p. 53, Arkiv Zool. ii, No. 4; *E. lycene*, Borneo, SWINHÖE, p. 144, Tr. ent. Soc. London 1904; *E. revera*, New Guinea, SWINHÖE, p. 421, Ann. Nat. Hist. xiv; *E. swinhoei*, pl. iv, fig. 20, *virginea*, fig. 16, p. 398, *parallelaria*, *kebeæ*, fig. 30, *dinawa*, fig. 29, *yulei*, fig. 28, p. 399, *rubroradiata*, fig. 21, *pratti*, fig. 13, *fusciradiata*, pl. vi, fig. 5, p. 400, *aroa*, *nigroapicalis*, pl. iv, fig. 34, *irregularis*, pl. vi, fig. 14, *albociliata*, fig. 2, p. 401, *novæguineensis*, *sublutea*, *flavicaput*, p. 402, New Guinea, BETHUNE-BAKER, Nov. Zool. xi; *E. leptotypa*, *ericydes*, Queensland, TURNER, p. 475, Tr. ent. Soc. London 1904 : n. spp.
- Eupterote jaresia*, Celebes, SWINHÖE, p. 152, Tr. ent. Soc. London 1904, n. sp.
- Eustema carama*, Peru, DRUCE, p. 248, Ann. Nat. Hist. xiii, n. sp.
- Fentonia corticicolor*, Cameroons, p. 3, pl.-fig. 11, AURIVILLIUS, Arkiv Zool. ii, No. 4, n. sp.
- Gargetta africana*, Cameroons, AURIVILLIUS, p. 7, t. c. n. sp.
- Garudiniistis aroa*, New Guinea, pl. iv, fig. 37, BETHUNE-BAKER, p. 422, Nov. Zool. xi, n. sp.
- Gastropacha populifolia* var. *flava*, SCHULTZ, p. 185, Soc. ent. xviii; *G. pini*, larva, the blue stripes, CHOLODKOVSKY, p. 556, pl. xxxi, fig. 3, Zool. Jahrb. Syst. xix.

- Geodena quadriguttata* = (*Cypsa bimaculata* Walk.), SWINHÖE, p. 148, Tr. ent. Soc. London 1904.
- G. semihyalina*, *bandajoma*, *accra*, p. 149, *suffusa*, *inferna*, *partita*, *sur-rendra*, p. 150, W. Africa, SWINHÖE, t. c. n. spp.
- Gerontia* n. g. *Megalopygidae*, *G. omayena* n. sp., British Guiana, SCHAUS, p. 139, Tr. Amer. ent. Soc. xxx.
- Girpa notata* Holl. to *Geodena*, SWINHÖE, p. 151, Tr. ent. Soc. London 1904.
- Gloveria coronada*, Arizona, BARNES, p. 268, Canad. Ent. xxxvi, n. sp.
- Gnophæla clappiana*, idiomorph n. *ruidosensis*, COCKERELL, p. 213, Entomologist 1904.
- Grammoa* n. g. *Lymantriidae*, p. 51, *G. striata* n. sp., Cameroons, p. 52, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Graphosia ochracea*, New Guinea, pl. v, fig. 36, BETHUNE-BAKER, p. 415, Nov. Zool. xi, n. sp.
- Gunda kebeæ*, p. 370, pl. iv, fig. 2, *aroa*, p. 371, New Guinea, BETHUNE-BAKER, t. c. n. spp.
- Halesidota maculata* var. n. *eureka*, DYAR, p. 19, P. ent. Soc. Washington vi.
- H. albipennis*, Bahamas, HAMFSON, p. 166, Ann. Nat. Hist. xiv; *H. grotei*, *tanamo*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx : n. spp.
- Halone flavopunctata*, pl. v, fig. 28, New Guinea, BETHUNE-BAKER, p. 421, Nov. Zool. xi, n. sp.
- Hapigia simplex* = (*ribbei* Druce), SCHAUS, p. 148, Tr. Amer. ent. Soc. xxx.
- H. estrella*, Arizona, BARNES, p. 267, Canad. Ent. xxxvi; *H. directa*, Cuba, p. 148, *curvilinea*, *plateada*, Brit. Guiana, p. 149, SCHAUS, Tr. Amer. ent. Soc. xxx : n. spp.
- Heliosia charopa*, Queensland, TURNER, p. 212, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Hemiceras pilacho*, Arizona, BARNES, p. 266, Canad. Ent. xxxvi; *H. constellata*, Costa Rica, *pogoda*, Merida, DOGNIN, p. 118, Ann. Soc. ent. Belgique xlviii; *H. moresca*, p. 147, *truncata*, *angulinea*, p. 148, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx : n. spp.
- Hemileuca maia*, marching of larva, MARSHALL, pp. 260-265, Biol. Bull. vi; *H. budleyi*, life-history, SOULE, pp. 118-120, Psyche xi.
- Heptalidæ*, Australian, synonymy and notes, TURNER, pp. 245-247, Tr. R. Soc. S. Austral. xxviii.
- Heptalus hectus* var., WOODBRIDGE, Entomologist 1904, p. 9, cut; *H. humuli*, variation in Faroes, ANNANDALE, p. 158, P. Phys. Soc. Edinb.
- Heterocampa dolens*, p. 248, *longula*, *luteilinea*, p. 249, Peru, DRUCE, Ann. Nat. Hist. xiii; *H. baracoana*, *santiago*, p. 145, *albidiscata*, Cuba, *sylvia*, *barensa*, Parana, p. 146, SCHAUS, Tr. Amer. ent. Soc. xxx : n. spp.
- Heterogynis*, notes on habits, specific distinctions, larvæ, cocoons, with *H. canalensis* n. sp., Spain, CHAPMAN, Tr. ent. Soc. London 1904, pp. 71-78, pls. xi-xiv.
- Heteronygmia manicata* Auriv. (as *Lymantria*) = (*rhodapicata* Holl.), SWINHÖE, p. 146, Tr. ent. Soc. London 1904.
- Heterusia semiflava*, New Guinea, JORDAN, p. 447, Nov. Zool. xi, n. sp. *Heterusia*, see also *Geometridæ*.
- Hirsutopalpis* n. g. *Notodontidae*, *H. fasciata* n. sp., New Guinea, BETHUNE-BAKER, p. 375, Nov. Zool. xi.
- Homococera rhodocera*, Chiriqui, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, n. sp.
- Homophylotis* n. g. near *Procris*, *H. thyridota* n. sp., Queensland, TURNER, p. 243, Tr. R. Soc. S. Austral. xxviii.
- Hyaloperina nudiussula*, Congo, AURIVILLIUS, p. 63, Arkiv Zool. ii, No. 4, n. sp.

- Hygochroa intricata*, Peru, DRUCE, p. 248, Ann. Nat. Hist. xiii, **n. sp.**
Hylemera funesta Warr. to *Geodena*, SWINHÖE, p. 149, Tr. ent. Soc. London 1904.
Hyleora inclyta=(*lacerta* Dr.), TURNER, p. 832, P. Linn. Soc. N. S. Wales 1904.
Hyperæschra collaris, Khasia Hills, SWINHÖE, p. 132, Ann. Nat. Hist. xiv, **n. sp.**
Hypercydas cæciloma, variation, BETHUNE-BAKER, p. 372, Nov. Zool. xi.
Hypidota **n. g.** near *Thalesa*, *H. neurias* **n. sp.**, Parana, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx.
Hypoprepia miniata, early stages, DYAR, p. 793, P. U. S. Mus. xxvii.
Ichthyura transecta, larva, HAMPSON, p. 150, J. Bombay Soc. xvi.
Pema obliterans, larva, p. 143, *apicalis*, larva, p. 144, pl. x, fig. 14, *natura*, larva, p. 145, PIEPERS, Tijdschr. Ent. xlvii.
I. androconia, E. Africa, HEYN, p. 25, Soc. ent. xix; *I. ekeikei*, pl. v, fig. 16, *dinawa*, fig. 15, *costistrigata*, fig. 30, p. 419, *unicolora*, fig. 31, *hades*, fig. 14, *nivea*, fig. 21, p. 420, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
Illice angelus, p. 198, *injecta*, *dorsimacula*, *liberomacula*, p. 199, N. America, DYAR, P. ent. Soc. Washington vi, **n. spp.**
Imaus niveus, *spodea*, pl. vi, fig. 1, *aroa*, *pratti*, pl. iv, fig. 15, & pl. vi, fig. 12, p. 409, *marginepunctata*, pl. vi, fig. 13, *dubia*, fig. 10, p. 410, *sulphurea*, fig. 11, p. 411, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
Imbrasia epimethea ertli subsp. n., REBEL, p. 67, pl. iii, Ann. Hofmus. Wien xix; *I. epimethea*, larva, AURIVILLIUS, p. 11, cut, Arkiv Zool. ii, No. 4.
Iropoca **n. g.** *Lymantriidæ*, for *rotundata* Walk., TURNER, p. 477, Tr. ent. Soc. London 1904.
Ischnocampa tovia, Peru, DOGNIN, p. 115, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Isostigena **n. g.** *Lasiocampidæ*, p. 395, *I. bicellata*, pl. iv, fig. 12, p. 396, **n. sp.**, BETHUNE-BAKER, Nov. Zool. xi.
Lambula aroa, *bilineata*, New Guinea, BETHUNE-BAKER, p. 416, t. c. **n. spp.**
Lasiocampa quercifolia and larva, habits, SCHUSTER, p. 285, Zool. Garten xlv.
Lasioceros **n. g.** *Notodontidæ*, p. 380, *L. aroa* **n. sp.**, New Guinea, p. 381, BETHUNE-BAKER, Nov. Zool. xi.
Lasiochara **n. g.** *Limacodidæ*, *L. pulchra*, pl. v, fig. 49, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 392, t. c.
Lasiolimacos **n. g.** *Limacodidæ*, *L. pratti*, pl. vi, fig. 32, *kenricki*, fig. 33, p. 388, *ferruginea*, fig. 50, p. 389, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.
Lepasta omaiensis, Brit. Guiana, SCHAUS, p. 144, Tr. Amer. ent. Soc. xxx, **n. sp.**
Leptonadata **n. g.** *Notodontidæ*, p. 2, *L. sjostedti* **n. sp.**, Cameroons, p. 3, AURIVILLIUS, Arkiv Zool. ii, No. 4.
Leucoma salicis, natural history, SCHUSTER, pp. 65-68, Zool. Garten xlv.
L. semikyalina, Sumatra, SWINHÖE, p. 421, Ann. Nat. Hist. xiv, **n. sp.**
Leucophobetron, characters, DYAR, p. 77, P. ent. Soc. Washington vi.
Lobeza schausi, Merida, DOGNIN, p. 117, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Lobobunæa sjostedti, characters and sexes, AURIVILLIUS, p. 9, Arkiv Zool. ii, No. 4.
Lomadonta obscura, p. 146, *saturata*, p. 147, W. Africa, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
Lonomia bethulia, Peru, DRUCE, p. 247, Ann. Nat. Hist. xiii, **n. sp.**

- Lophopteryx cuculla*, life-history, RIDING, pp. 249-252, Ent. Rec. xvi.
Ludia obscura, cut, larva and pupa, AURIVILLIUS, p. 15, Arkiv Zool. ii, No. 4.
Lyclene peloa, Sumatra, SWINHÖE, p. 420, Ann. Nat. Hist. xiv, n. sp.
Lycomorphodes calopteridion, Organ Mts., JOANNIS, p. 289, Bull. Soc. ent. France 1904, n. sp.
Lymantriidæ, table of Ethiopian genera, AURIVILLIUS, pp. 62-68, Arkiv Zool. ii, No. 4.
Lymantria vacillans ♀, larva and pupa, cuts, AURIVILLIUS, t. c.; *Lymantria*, cf. *Argyrotagma*.
L. novaguineensis, pl. vi, fig. 35, p. 407, *ekeikei*, fig. 18, *kebeæ*, fig. 22, p. 408, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, n. spp.
Macaduna bipunctata, pl. v, fig. 29, *aroa*, New Guinea, BETHUNE-BAKER, p. 421, t. c. n. spp.
Macrocneme viridifusa, Parana, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, n. sp.
Macrosia fumeola = (*Lithosia natalica* Möschl.), AURIVILLIUS, p. 35, Arkiv Zool. ii, No. 4.
Mænas punctatostrigata, New Guinea, pl. vi, fig. 15, BETHUNE-BAKER, p. 412, Nov. Zool. xi, n. sp.
Malacosoma neustria, variation and colour, and food, DOUGLAS, p. 43, Entomologist 1904.
Malocampa epantherioides, Brit. Guiana, SCHAUS, p. 146, Tr. Amer. ent. Soc. xxx, n. sp.
Marthula aurea, Peru, DRUCE, p. 248, Ann. Nat. Hist. xiii, n. sp.
Maschane leechi, Amazons, p. 249, *neobule*, Costa Rica, p. 250, DRUCE, t. c. n. spp.
Megalopyge govana, *aricia*, *nigrescens*, S. America, SCHAUS, p. 139, Tr. Amer. ent. Soc. xxx; *M. gamelia*, Peru, p. 246, DRUCE, Ann. Nat. Hist. xiii : n. spp.
Megapisa n. g. *Syntomiidæ*, p. 29, *M. nigripennis* n. sp., Centr. Africa, p. 30, AURIVILLIUS, Arkiv Zool. ii, No. 4.
Melanergon n. g. *Eupterotidæ*, *M. proserpina* n. sp., New Guinea, BETHUNE-BAKER, p. 372, Nov. Zool. xi.
Meragisa dasra, p. 116, *darida*, p. 117, Peru, DOGNIN, Ann. Soc. ent. Belgique xlviii, n. spp.
Metarecta nigriceps, p. 30, *rubrovittata*, *preussi*, p. 31, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4, n. spp.
Mitochrista vetusta, Java, pl. xi, fig. 4, p. 163, SNELLEN, Tijdschr. Ent. xlvii, n. sp.
Misogada pallida, Cuba, SCHAUS, p. 145, Tr. Amer. ent. Soc. xxx, n. sp.
Mylantria n. g. near *Lymantria* for *xanthospila* Plötz, AURIVILLIUS, p. 54, Arkiv Zool. ii, No. 4.
Narosa aroa, New Guinea, BETHUNE-BAKER, p. 386, Nov. Zool. xi, n. sp.
Natada monomorpha, Queensland, TURNER, p. 242, Tr. R. Soc. S. Austral. xxviii, n. sp.
Neacerea nigra, Chiriqui, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, n. sp.
Nemeophila cervini varr., pp. 54-59, pl. i, OBERTHÜR, Études comp. i.
Nervicompressa n. g. *Limacodidæ*, p. 389, *N. unistrigata*, pl. iv, fig. 5, *lunulata*, fig. 4, p. 390, *albomaculata*, fig. 3, *dubia*, fig. 19, *kebeæ*, fig. 10, p. 391, *aroa*, fig. 6, p. 392, n. spp., New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
Nesaca albimacula, Bahamas, HAMPSON, p. 180, Ann. Nat. Hist. xiv, n. sp.
Nishada flabrifera, larva, pl. x, fig. 3, p. 141, PIEPERS, Tijdschr. Ent. xlvii.
N. melanopa, New Guinea, pl. v, fig. 19, BETHUNE-BAKER, p. 417, Nov. Zool. xi, n. sp.
Nola distributa, larva, pl. x, fig. 1, p. 139, PIEPERS, Tijdschr. Ent. xlvii.

- Notohyba* (?) *bimaculata*, *insolita*, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4, **n. spp.**
- Nudaria discipuncta*, larva, p. 164, PIEPERS, Tijdschr. Ent. xlvii.
- Nudaurelia dione*, larva, AURIVILLIUS, p. 10, cut, Arkiv Zool. ii, No. 4.
- Nyctemera* = (*Deilemera*), TURNER, p. 471, Tr. ent. Soc. London 1904; *Nyctemera*, cf. *Eohemera*; *N. simplex*, cf. *Xylecata*.
- Nystalea kayei*, Brit. Guiana, p. 142, *guttulata*, Cuba, *malga*, *corrusca*, Rio Janeiro, p. 143, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Odonestis pruni* ab. *rosacea*, SCHULTZ, p. 185, Soc. ent. xviii.
- O. centralistrigata*, pl. iv, fig. 7, New Guinea, BETHUNE-BAKER, p. 397, Nov. Zool. xi, **n. sp.**
- Ænosanda boisduvalii* ♀ = (*Lomatosticha nigrostriata* Motsch.), TURNER, p. 833, P. Linn. Soc. N. S. Wales 1904.
- Omichlis hamptoni*, pl. v, fig. 2, p. 375, *dinawa*, fig. 3, *ochracea*, fig. 6, p. 376, *griseola*, fig. 7, *pratti*, fig. 5, *rufofasciata*, pl. vi, fig. 17, p. 377, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Oxonistis bicolora*, New Guinea, pl. vi, fig. 34, BETHUNE-BAKER, p. 420, Nov. Zool. xi, **n. sp.**
- Opodiphthera papuana*, New Guinea, ROTHSCILD, p. 601, Nov. Zool. xi, **n. sp.**
- Opsirhina aroa*, New Guinea, BETHUNE-BAKER, p. 395, Nov. Zool. xi, **n. sp.**
- Oreta angustipennis*, Niger, WARREN, p. 461, Nov. Zool. xi, **n. sp.**
- Orgyia splendida*, larva, CHAPMAN, pp. 195-198, Ent. Rec. xvi.
- Ormiscodes radama*, *O. ? choba*, Peru, DRUCE, p. 245, Ann. Nat. Hist. xiii **n. spp.**
- Osica glauca* = (*turneri* and *funerea* Bak.), TURNER, p. 834, P. Linn. Soc. N. S. Wales 1904.
- O. turneri*, pl. vi, fig. 31, *funerea*, New Guinea, BETHUNE-BAKER, p. 374, Nov. Zool. xi, **n. spp.**
- Othorene rubra*, *carisma*, p. 141, *subochreatea*, p. 142, Brit. Guiana, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Pais ansorgei*, Africa, JORDAN, p. 445, Nov. Zool. xi, **n. sp.**
- Paraceryx* **n. g.** *Syntomidæ*, *P. aroa* **n. sp.**, New Guinea, BETHUNE-BAKER, p. 384, Nov. Zool. xi.
- Paradohertya* **n. g.** *Lithosiinæ*, *P. trifascia*, pl. iv, fig. 36, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 421, t. c.
- Parasa toxoleuca*, Queensland, TURNER, p. 242, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Parazeuzera* **n. g.** *Cossidæ*, *P. celena*, pl. v, fig. 9, *aurea*, fig. 10, **n. spp.**, New Guinea, BETHUNE-BAKER, p. 384, Nov. Zool. xi.
- Peratodonta* **n. g.** *Notodontidæ*, *P. brunnea* **n. sp.**, Cameroons, AURIVILLIUS, p. 6, Arkiv Zool. ii, No. 4, **n. spp.**
- Perophora bilinea*, Parana, SCHAUS, p. 141, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Phalera ? variegata*, Cameroons, AURIVILLIUS, p. 4, Arkiv Zool. i, No. 4, **n. sp.**
- Phassus schamyl*, natural history, DEGENER & SCHAPOSCHNIKOW (359).
- Phiala simplex*, pl. xxxiii, fig. 1, *marshalli*, fig. 2, Mashonaland, p. 695, *fuscodorsata*, fig. 3, *abyssinica*, fig. 4, E. Africa, p. 696, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. spp.**
- Philosamia cynthia*, variation and elimination, CRAMPTON, Biometrika iii, pp. 113-130.
- Phragmatobia fuliginosa*, habits, distribution, variation, TUTT, pp. 58-67, Ent. Rec. xvi; DOLLMAN, t. c. pp. 114-116; BACOT, t. c. pp. 176-182.
- P. urania*, *celestina*, Centr. Asia, PÜNGELER, p. 121, Soc. ent. xix; *P. ansorgei*, Angola, JORDAN, p. 442, Nov. Zool. xi: **n. spp.**
- Pielus aphenges*, N. S. Wales, TURNER, p. 247, Tr. R. Soc. S. Austral. xxviii, **n. sp.**

- Poresta cossoides*, Brit. Guiana, SCHAU, p. 144, Tr. Amer. ent. Soc. xxx, n. sp.
- Porthesia*, parthenogenesis, GARBOWSKI, Zool. Anz. xxvii, p. 212.
- P. aroa*, p. 397, *alba*, *meeki*, *ekeikei*, pl. vi, fig. 22, p. 398, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, n. spp.
- Porthetria dispar*, gynandromorph, KUSNEZOV, p. 203, Rev. Russe Ent. iv.
- Prolatoia sjostedti*, larva, cuts, AURIVILLIUS, p. 45, Arkiv Zool. ii, No. 4.
- Pselaphelia* n. g. for *Copaxa gemmifera* Butl., AURIVILLIUS, p. 13, cut, t. c.
- Pseudantheraea discrepans*, pupa, AURIVILLIUS, p. 12, t. c.
- Pseudapiconoma compsa*, *gloriosa*, p. 441, *fenestrata*, p. 442, Angola, JORDAN, Nov. Zool. xi, n. spp.
- Pseudilema* n. g. *Lithosiinae*, p. 418, *P. dinawa*, pl. v, figg. 17, 18, p. 419, n. sp., New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Pseudoblabe oophora*, larva, p. 146, pl. x, fig. 5, PIEPERS, Tijdschr. Ent. xlvii.
- Pseudodreata* n. g. *Eupterotidae*, *P. strigata* n. sp., pl. v, fig. 45, New Guinea, BETHUNE-BAKER, p. 371, Nov. Zool. xi.
- Pseudodryas luteopunctata*, Peru, DOGNIN, p. 115, Ann. Soc. ent. Belgique xlviii, n. sp.
- Pseudogargetta* n. g. *Notodontidae*, *P. diversa* n. sp., pl. v, fig. 4, New Guinea, BETHUNE-BAKER, p. 373, Nov. Zool. xi.
- Pseudospiris jucunda*, Angola, JORDAN, p. 444, Nov. Zool. xi, n. sp.
- Pteroceropsis* n. g. *Zygænidæ*, *P. unipuncta* n. sp., Borneo, SWINHOE, p. 154, Tr. ent. Soc. London 1904.
- Pydna endophaea*, India, HAMPSON, p. 149, pl. d, fig. 1, J. Bombay Soc. xvi, n. sp.
- Pygæomorpha* n. g. *P. modesta*, pl. v, fig. 35, *brunnea*, fig. 34, New Guinea, n. spp., BETHUNE-BAKER, p. 387, Nov. Zool. xi.
- Pygaretia neomexicana*, Texas, BARNES, p. 166, Canad. Ent. xxxvi, n. sp.
- Pyropsyche moncaunella*, fig., pl. ii, CHAPMAN, Ent. Rec. xvi, p. 67, n. sp., also plate and explanation published in P. South London Soc. 1903 and pl. xvi, Tr. ent. Soc. London 1904.
- Rebelia plumella*, natural history, KLOS, pp. 607-609, Verh. Ges. Wien liv.
- Rhodia fugax*, sound-producing larva, PACKARD, p. 92, J. N. York Ent. Soc. xii; *R. fugax*, life-history, PACKARD, pp. 559-564, P. Amer. Ac. xxxix.
- Rhynchophalera* n. g. *Notodontidae*, p. 1, *R. signata* n. sp., Cameroons, p. 2, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Rifargia picta*, *guianensis*, Brit. Guiana, SCHAU, p. 147, Tr. Amer. ent. Soc. xxx, n. spp.
- Roeselia ustipennis*, larva, pl. x, fig. 2, p. 140, PIEPERS, Tijdschr. Ent. xlvii.
- R. basifusca*, New Guinea, pl. vi, fig. 24, BETHUNE-BAKER, p. 415, Nov. Zool. xi, n. sp.
- Rothia mariae*, Uganda, SWINHOE, p. 139, Tr. ent. Soc. London 1904, n. sp.
- Rothschildia*, characters, larva, PACKARD, p. 4, Ent. News Philad. xv; *R. jorulla*, pp. 552-554, *orizaba*, pp. 555, 556, *jacobae*, pp. 557-559, partial life-histories, PACKARD, P. Amer. Ac. xxxix.
- R. steinbachi*, Tucuman, ROTHSCHILD, p. 601, Nov. Zool. xi, n. sp.
- Sapelia flavipectus* ♂, SWINHOE, p. 131, Ann. Nat. Hist. xiv.
- S. sulphureivena*, Cameroons, p. 50, larva and pupa, cuts, p. 51, AURIVILLIUS, Arkiv Zool. ii, No. 4, n. sp.
- Sarosa meridensis*, Venezuela, SCHAU, p. 135, Tr. Amer. ent. Soc. xxx, n. sp.
- Saturnia pavonia* ab. n. *stefanelli*, ROSTAGNO, p. 122, Boll. Soc. zool. Ital. xii, p. 122.

- Scalmicauda* ? *fuscina*, Cameroons, AURIVILLIUS, p. 5, fig. 13, Arkiv Zool. ii, No. 4, **n. sp.**
- Scaptosyle thestias*, pl. xi, fig. 6, p. 149, *bifasciata*, fig. 7, p. 150, Java, SNELLEN, Tijdschr. Ent. xlvii; *S. aroa*, New Guinea, pl. vi, fig. 19, BETHUNE-BAKER, p. 422, Nov. Zool. xi : **n. spp.**
- Scepsis packardii* var. *n. cocklei*, DYAR, p. 792, P. U. S. Mus. xxvii.
- Schistophleps bicolora*, pl. 5, fig. 40, *aroa*, New Guinea, BETHUNE-BAKER, p. 426, Nov. Zool. xi, **n. spp.**
- Scoliacma aroa*, p. 416, *hampsoni*, pl. v, fig. 20 and pl. vi, fig. 23, p. 417, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
- Scopelodes tantula*, Khasia Hills, SWINHOE, p. 132, Ann. Nat. Hist. xiv; *S. dinawa*, pl. v, fig. 48, p. 384, *nitens*, fig. 51, p. 385, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Scrancia nigra*, W. Africa, AURIVILLIUS, p. 7, Arkiv Zool. ii, No. 4, **n. sp.**
- Sibine bonderensis*, mode of emergence, KÜNCHEL, C.R. Ac. Sci. cxxxviii, p. 1624.
- Siccia tau* ♀, pl. xi, fig. 3, p. 155, SNELLEN, Tijdschr. Ent. xlvii.
- Slossonella* **n. g.** near *Heterogenea*, *S. tenebrosa* **n. sp.**, Florida, DYAR, p. 117, P. ent. Soc. Washington vi.
- Somatoxena* **n. g.** *Lymantriidae*, type *lasea* Druce, AURIVILLIUS, p. 66, Arkiv Zool. ii, No. 4.
- Somera oxoia*, Borneo, SWINHOE, p. 152, Tr. ent. Soc. London 1904, **n. sp.**
- Spatalia argentifera* ♂, TURNER, p. 832, P. Linn. Soc. N. S. Wales 1904.
- Sphinta* **n. g.** *Lasiocampidae*, *S. cossoides* **n. sp.**, Parana, SCHAUS, p. 140, Tr. Amer. ent. Soc. xxx.
- Spilosoma fuliginosa*, digestive system of larva, BORDAS, C.R. Soc. Biol. lvi, pp. 1099, 1100; *S. mendica* and var. *rustica*, wing and spot development, mimicry, FEDERLEY, pp. 178-181, Allg. Zeitschr. Ent. ix.
- Sporostigena* **n. g.** *Lasiocampidae*, *S. uniformis*, pl. iv, fig. 11, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 396, Nov. Zool. xi.
- Squamosala* **n. g.** *Limacodidae*, p. 392, *S. nigrostigmata*, pl. v, fig. 47, p. 393, **n. sp.**, New Guinea, BETHUNE-BAKER, t. c.
- Stauroptis mioides*, Assam, HAMPSON, p. 150, J. Bombay Soc. xvi; *S. viridissimus*, pl. iv, fig. 1, *kebea*, pl. v, fig. 52, p. 378, *dubiosus*, pl. vi, fig. 39, *bella*, pl. iv, fig. 14, *dinawa*, fig. 17, p. 379, *pratti*, fig. 18, p. 380, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Stenoscapta phlogozona*, Townsville, TURNER, p. 212, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Stibolepis hologramma*, Mashonaland, pl. xxxiii, fig. 7, p. 697, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Stracena fuscivena* ♂, SWINHOE, p. 144, Tr. ent. Soc. London 1904; *S. fuscivena* ♂ ♀, pl. i, figs. 1, 2, larva and pupa, p. 42, cuts, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Susica alphae* (= *Lethocephala eremospila* Low.), *T. miltocosma* (= *Momopola cosmocalla* Low.), TURNER, p. 243, Tr. R. Soc. S. Austral. xxviii.
- Synogdoia* **n. g.** *Lymantriidae*, p. 52, *S. simplex* **n. sp.**, Cameroons, p. 53, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Syntomeida hampsonii*, Arizona, BARNES, p. 165, Canad. Ent. xxxvi, **n. sp.**
- Syntomidae*, revision of Australian, TURNER, pp. 834-858, P. Linn. Soc. N. S. Wales 1904.
- Syntomis phegea* var. *n. krugari*, pl. i, fig. 2, *cyclopea*, fig. 3, RAGUSA, p. 20, Natural. Sicil. xvii; *S. phegea* var. *n. sexmaculata*, GHANELLI, t. c. p. 25.
- S. orphana*, Java, SNELLEN, p. 57, Tijdschr. Ent. xlvii; *S. xanthura*, p. 843, *choneutospila*, p. 844, *chromatica*, p. 845, *paradelpha*, *magistri*, p. 846, *prosomaea*, p. 850, *heptaspila*, p. 852, *melitospila*, p. 853, *dyschlæna*, p. 855, Australia, TURNER, P. Linn. Soc. N. S. Wales 1904 : **n. spp.**
- Taragama dinawa*, pl. iv, fig. 8, *rubiginea*, fig. 2, *prosperina*, fig. 9, New Guinea, BETHUNE-BAKER, p. 394, Nov. Zool. xi, **n. spp.**

- Tarsolepis sommeri*, *dinawensis* subsp. n., BETHUNE-BAKER, p. 373, t. c.
Telea, and other *Attaci*, spinning habits, WEBSTER, p. 133, FOSTER, t. c. p. 144, Canad. Ent. xxxvi; *T. polyphemus*, position of cocoons, COCKLE, p. 100, Canad. Ent. xxxvi; *T. polyphemus*, spinning habits, WEBSTER, p. 336, Canad. Ent. xxxvi.
Terphothrix lanaria, larva, AURIVILLIUS, p. 61, cuts, Arkiv Zool. ii, No. 4.
Thanatopsyche apicalis, Bahamas, HAMPSON, p. 180, Ann. Nat. Hist. xiv, n. sp.
Themerastis amalopa, Cairns, TURNER, p. 833, P. Linn. Soc. N. S. Wales 1904, n. sp.
Theophila mandarina, cf. *Bombyx mori*.
Thoscora n. g. *Megalopygidæ*, p. 139, *T. brucea* n. sp., Venezuela, p. 140, SCHAUS, Tr. Amer. ent. Soc. xxx.
Thosea bombycoides (= *erecta* Swinh. = *Doratiphora amphibrota* Low.), TURNER, p. 242, Tr. R. Soc. S. Austral. xxviii.
T. peralbida, Poona, SWINHÖE, p. 153, Tr. ent. Soc. London 1904, n. sp.
Tigrioides = (*Lexis* Hamps.), AURIVILLIUS, p. 35, Arkiv Zool. ii, No. 4.
Trochuda n. g. *Liparidæ*, *T. bilinea* n. sp., Brit. Guiana, SCHAUS, p. 140, Tr. Amer. ent. Soc. xxx.
Tuerta hemicycla, Bahamas, HAMPSON, p. 166, Ann. Nat. Hist. xiv; *T. thomensis*, St. Thomé, JORDAN, p. 445, Nov. Zool. xi : n. spp.
Viana, defined, p. 688, *V. crowleyi*, Sierra Leone, p. 699, pl. xxxiii, fig. 9, n. sp., AURIVILLIUS, Tr. ent. Soc. London 1904.
Virbia rotundata, Parana, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, n. sp.
Xanthospilopteryx catori, Sierra Leone, JORDAN, p. 443, Nov. Zool. xi, n. sp.
Xylecata n. g. *Deilemerinæ*, *X. druna* n. sp., Gaboon, and including *Nyctemera simplex* Walk., SWINHÖE, p. 148, Tr. ent. Soc. London 1904.
Zeuzera eucalypti, note, LITTLER, p. 114, Entomologist 1904.
Zygæna scabiosa var. n. *flaveola*, *hoffmanni*, *nigerrima*, p. 69, ZICKERT, Natural. Sicil. xvii; *Z. ephialtes*, *fausta*, *carniolica*, varr. and hybrids, pp. 43–52, pl. iii, OBERTHÜR, Études comp. i; *Z. fausta* and *hippocrepidis*, crossing, variation in Charente, DUPUY, pp. 11, 12, Feuille Natural. xxxv; *Z. minos* and *Syntomis phegea*, hybrid, VAN ROSSUM, p. 94, Ent. Ber. Nederl. i; *Z. trifolii* and *filipendulæ*, hybridisation, SOUTH, p. 15, Entomologist 1904; *Z. fausta*, *hippocrepidis*, coupled, *Z. fausta* var., DUPUY, p. 226, Bull. Soc. ent. France 1904.

NOCTUIDÆ.

- [Cf. ALPHÉRAKY (25), BARNES (88), BARTEL (91), BETHUNE-BAKER (116), DYAR (420, 422, 431, 432, 439), FUCHS (572), HAMPSON (653), HAVERHORST (666), HERZ (680, 680A), HOLE (696), JOANNIS (763), MEYRICK (947, 948), OBERTHÜR (987), PÜNGELER (1110, 1111), REBEL (1122), SCHAUS (1225), SMITH (1312–1314), SWINHÖE (1361, 1364), THURAU (1386), TSCHETVERIKOV (1400), TURNER (1411).]

Remarks on the classification of *Noctuidæ* with table of subfam. and of phylogeny, and on Hampson's recent Catalogue, SMITH, J. N. York Ent. Soc. xii, pp. 93–104.

The head-shield of pupa, HAVERHORST (666).

Abrostola asclepiadis, var. n. *jagowi*, BARTEL, p. 160, Deutsche ent. Zeitschr. Iris xvii.

Acantholipes mesoscota, Bahamas, HAMPSON, p. 171, Ann. Nat. Hist. xiv n. sp.

Acontia ceyvestensis n. var., DYAR, p. 63, P. ent. Soc. Washington vi.

A. ? harmina, *medalba*, Parana, SCHAUS, p. 163, Tr. Amer. ent. Soc. xxx, n. spp.

- Acronycta alni*, larvæ, the hairs and yellow mark, CHOLODKOVSKY, Zool. Jahrb. Syst. xix, p. 554, pl. xxxi, figg. 1, 2.
- A. albonigra*, Korea, HERZ, p. 269, pl. i, fig. 3, Annuaire Mus. St. Petersb. ix, n. sp.
- Adelphagrotis prasina*, early stages, DYAR, p. 819, P. U. S. Mus. xxvii.
- Admetovis similaris*, N. America, BARNES, p. 200, Canad. Ent. xxxvi, n. sp.
- Agrophila labuana*, Borneo, SWINHÖE, p. 139, Tr. ent. Soc. London 1904, n. sp.
- Agrotis fimbricola* var. n. *leonhardi*, REBEL, p. 208, pl. v, fig. 13, Ann. Hofmus. Wien xix; *A. decora* var. n. *decorata*, NEUBURGER, p. 131, Soc. ent. xix; *A. fucata*, life-history, PÜNGELER, pp. 65-67, Natural. Sicil. xvii; *A. baja*=(*smithii* Sn.), SNELLEN, p. 91, Tijdschr. Ent. xlv.
- A. (Euxoa) impeza*, *A. (Lycophotia) oreas*, p. 122, *A. (Episilia) posterva*, p. 130, Centr. Asia, PÜNGELER, Soc. ent. xix; *A. (Platagrotis) sajana*, Mongolia, TSCHETVERIKOV, p. 77, Rev. Russe Ent. iv; *A. aldani*, p. 6, *A. (Platagrotis) vega*, p. 7, Lena, HERZ, Ofv. Finska Forh. xlv No. 15; *A. hephæstæa*, Oahu, MEYRICK, p. 346, Fauna Hawaiensis iii : n. spp.
- Alaria diffusa*, Arizona, BARNES, p. 238, Canad. Ent. xxxvi, n. sp.
- Amiana* n. g. p. 104, *A. niama* n. sp., Arizona, p. 105, DYAR, P. ent. Soc. Washington vi.
- Ammocania parvispina*, Mongolia, TSCHETVERIKOV, p. 78, Rev. Russe Ent. iv, n. sp.
- Amphoraceras* n. g. p. 427, *A. rothschildi*, pl. v, fig. 1, p. 428, n. sp., New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Anarta mausi*, Centr. Asia, PÜNGELER, p. 130, Soc. ent. xix, n. sp.
- Angitia pulchra*, *perplexa*, Venezuela, *A. ? viridans*, Parana, SCHAUS, p. 165, Tr. Amer. ent. Soc. xxx, n. spp.
- Antaplagia hachita*, Arizona, BARNES, p. 241, Canad. Ent. xxxvi, n. sp.
- Apatela*, varr. n., DYAR, p. 29, Canad. Ent. xxxvi; *A. dactylina-hesperida*, p. 797, *felina*, p. 798, *leporina-mæsta*, p. 799, *innotata-griseor*, p. 801, *grisea-revellata*, p. 802, *distans-dolorosa*, p. 804, *perdita*, p. 805, *impleta-illita*, p. 807, early stages, DYAR, P. U. S. Mus. xxvii.
- Aplectu nebulosa* var. n. *thompsoni*, ARKLE, p. 180, Ent. Mag. xl; *A. thompsoni* is *robsoni*, TUTT, p. 255, Ent. Mag. xl, ARKLE, t. c. p. 278.
- Aplodes rubrifrontaria* var. n. *darwiniata*, DYAR, p. 903, P. U. S. Mus. xxvii.
- Apopestes spectrum* var. n. *koreana*, HERZ, p. 315, pl. i, fig. 11, Annuaire Mus. St. Petersb. ix.
- Axiolata glycyphroa*, Thursday isld., TURNER, p. 218, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Baniana pannicula*, Borneo, SWINHÖE, p. 423, Ann. Nat. Hist. xiv, n. sp.
- Baptarma* n. g. *B. felicitæ* n. sp., Arizona, SMITH, p. 59, Psyche xi.
- Behrensia hutsonii*, Arizona, SMITH, p. 60, t. c. n. sp.
- Bleptina cardinalis*, early stages, DYAR, p. 881, P. U. S. Mus. xxvii.
- Boana broda*, Trinidad, *arocalis*, Venezuela, SCHAUS, p. 168, Tr. Amer. ent. Soc. xxx, n. spp.
- Bocana madida*, Borneo, SWINHÖE, p. 143, Tr. ent. Soc. London 1904, n. sp.
- Bomolocha nigrobasalis*, Korea, HERZ, p. 329, pl. i, fig. 13, Annuaire Mus. St. Petersb. ix; *B. chicagonis*, N. America, DYAR, p. 105, P. ent. Soc. Washington vi : n. spp.
- Bryophila simulatricula*, p. 59, pl. iv, fig. 2, OBERTHÜR, Études comp. i.
- B. algama*, Parana, SCHAUS, p. 151, Tr. Amer. ent. Soc. xxx, n. sp.
- Busseola* n. g. *Agrotinæ*, p. 55, *B. sorghicida* n. sp., E. Africa, p. 56, THURAU, Berlin. ent. Zeitschr. xlix.
- Callopietria (Eriopus) miracula*, Korea, HERZ, p. 284, Annuaire Mus. St. Petersb. ix, n. sp.
- Caradrina albistigma*, Borneo, SWINHÖE, p. 139, Tr. ent. Soc. London 1904;

- C. nitens*, Brit. Columbia, DYAR, p. 30, Canad. Ent. xxxvi; *C. tacna*, Texas, BARNES, p. 167, Canad. Ent. xxxvi: **n. spp.**
- Carea annæ*, p. 140, *mathilda*, p. 141, Borneo, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Casandria poliotis*, Bahamas, HAMPSON, p. 170, Ann. Nat. Hist. xiv, **n. sp.**
- Catocala obscura*, larva, *residua* distinct, DODGE, p. 115, Canad. Ent. xxxvi.
- Caularis lunata*, Bahamas, HAMPSON, p. 169, Ann. Nat. Hist. xiv, **n. sp.**
- Chamyla vecors*, Centr. Asia, PÜNGELER, p. 131, Soc. ent. xix, **n. sp.**
- Cleoceris*, discolor, New Mexico, SMITH, p. 55, Psyche xi, **n. sp.**
- Collusa ekeikei*, New Guinea, pl. vi, fig. 42, BETHUNE-BAKER, p. 429, Nov. Zool. xi, **n. sp.**
- Copablepharon sanctæmonicæ*, California, DYAR, p. 64, P. ent. Soc. Washington vi, **n. sp.**
- Corula delosticha*, Queensland, TURNER, p. 215, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Cryptotidia wollastoni*, figg., AURIVILLIUS, p. 9, Jägerskiöld exp., No. 8.
- Cucullia linozyridis* varr., larva, p. 32, pl. ii, figg. 3, 4, 12, *C. umbratica* var., p. 32, *anthemidis*, larva, p. 34, FUCHS, Jahrb. nassau. Ver. lvii.
- C. clarior*, Sarepta, FUCHS, p. 31, pl. ii, fig. 2, t. c.; *C. indicta*, Calgary, SMITH, p. 154, Canad. Ent. xxxvi; *C. aqua*, Arizona, BARNES, p. 203, Canad. Ent. xxxvi, *C. oribac*, Arizona, BARNES, p. 237, t. c.: **n. spp.**
- Cydosia punctistriga*, Parana, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Cymatophora*, cf. *Geometridæ*.
- Cyrima muscosa*, Mexico, SCHAUS, p. 152, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Dargida procincta*, early stages, DYAR, p. 860, P. U. S. xxvii.
- Dasycampa rubiginea*, figg. 40-43, *staudingeri*, figg. 47-51, varr., pp. 62-65, OBERTHÜR, Études comp. i.
- Diantheecia lypra*, Askhabad, PÜNGELER, p. 287, pl. vi, fig. 3, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Doryodes insularia*, Bahamas, HAMPSON, p. 174, Ann. Nat. Hist. xiv, **n. sp.**
- Epizeuxis (Helia) lunulata*, Korea, pl. i, fig. 12, p. 320, HERZ, Annuaire Mus. St. Petersb. ix.
- Erastris martjanovi*, Minussinsk, TSCHETVERIKOV, Rev. Russe Ent. iv; *E. rhapsina*, Thursday isld., TURNER, p. 217, Tr. R. Soc. S. Austral. xxviii; *E. panatela*, Winnipeg, SMITH, p. 60, Psyche xi; *E. cogela*, *mirabilis*, *oletta*, S. America, SCHAUS, p. 161, Tr. Amer. ent. Soc. xxx: **n. spp.**
- Ercheia abnormis*, Perak, SWINHÖE, p. 424, Ann. Nat. Hist. xiv, **n. sp.**
- Eriopyga brachia*, Organ Mts., JOANNIS, p. 290, Bull. Soc. ent. France 1904, **n. sp.**
- Eublemma vestina*, Borneo, SWINHÖE, p. 140, Tr. ent. Soc. London 1904, **n. sp.**
- Eupalindia magnifica*, p. 165, *rubescens*, p. 166, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Euplexia chloëropis*, Queensland, TURNER, p. 213, Tr. R. Soc. S. Austral. xxviii; *E. leucobasis*, Bahamas, HAMPSON, p. 167, Ann. Nat. Hist. xiv: **n. spp.**
- Eustrotia walta*, p. 153, *penthis*, *editha*, Mexico, *lithodia*, *longena*, p. 154, *vicina*, *marmorata*, *thionaris*, *hermosilla*, p. 155, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Eutelia grabcewskyi*, Nikko, PÜNGELER, p. 289, pl. vi, fig. 5, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Euthisanotia magnifica*, Brazil, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Euxoa pestula*, Calgary, SMITH, p. 150, Canad. Ent. xxxvi, **n. sp.**

- Exyra semicrocea* var. n. *hubbardiana*, DYAR, p. 59, P. ent. Soc. Washington vi.
- Fugitana parallela*, Bahamas, HAMPSON, p. 168, Ann. Nat. Hist. xiv; *F. niveigutta*, *marginata*, Parana, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx: n. spp.
- Feltia vancouverensis*, p. 831, *æneipennis*, p. 832, early stages, DYAR, P. U. S. Mus. xxvii.
- Grammodes pulcherrima* Luc.=(*clementi* Swinh.), SWINHOE, p. 142, Tr. ent. Soc. London 1904.
- Graphiphora communis*, early stages, DYAR, p. 868, P. U. S. Mus. xxvii.
- Grotella blanca*, p. 239, *tricolor*, p. 240, Arizona, BARNES, Canad. Ent. xxxvi, n. spp.
- Gustiana guarda*, Mexico, SCHAUS, p. 168, Tr. Amer. ent. Soc. xxx, n. sp.
- Hadena ferrago* ab. n. *umbrata*, HERZ, p. 8, Ofv. Finska Forh. xlv, No. 15; *H. curvata*, p. 810, and *versuta*, p. 811, early stages, DYAR, P. U. S. Mus. xxvii.
- H. maida*, Brit. Columbia, DYAR, p. 30, Canad. Ent. xxxvi; *H. kyune*, Arizona, BARNES, p. 168, Canad. Ent. xxxvi; *H. multicolor*, Victoria, *geminimacula*, New Mexico, DYAR, p. 103, P. ent. Soc. Washington vi: n. spp.
- Heliophila oxygale*, p. 862, *roseola*, p. 863, *heterodoxa*, p. 865, early stages, DYAR, P. U. S. Mus. xxvii.
- Heliothis cora* ab. n. *odenwalli*, HERZ, p. 21, Ofv. Finska Forh. xlv, No. 15.
- H. dipsacea* var. n. *albida*, FUCHS, p. 38, Jahrb. Nassau. Ver. lvii.
- Hermionodes lignea*, *H. ? taltula*, Parana, SCHAUS, p. 167, Tr. Amer. ent. Soc. xxx, n. spp.
- Heterographa pungeleri*, Jordan, BARTEL, p. 161, Deutsche ent. Zeitschr. Iris xvii, n. sp.
- Himella infidelis*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi, n. sp.
- Hiptelia apfelbecki*, p. 228, ♂, pl. v, fig. 14, REBEL, Ann. Hofmus. Wien xix.
- Homohadena fifia*, p. 30, *cocklei*, p. 31, Brit. Columbia, DYAR, Canad. Ent. xxxvi, n. spp.
- Homoptera calycanthata*, early stage, DYAR, p. 879, P. U. S. Mus. xxvii.
- Hyblæa puera*, natural history, injuries to teak, HOLE, pp. 680-697, pls., J. Bombay Soc. xx.
- Hyperba humuli*, early stages, DYAR, p. 882, P. U. S. Mus. xxvii.
- H. zarabena*, p. 168, *drucealis*, *tepicalis*, Mexico, *calistalis*, Trinidad, *castricalis*, p. 169, *purpuralis*, *freijs*, *syllificalis*, S. America, *bergealis*, Jamaica, *rosealis*, Mexico, p. 170, *dasiatis*, *rivalis*, *jonesalis*, *perialis*, p. 171, *glumalis*, *gozama*, *uvalis*, S. America, *queenealis*, *tossalis*, p. 172, *coatalis*, Mexico, *peruvialis*, *claxalis*, p. 173, *turalis*, *braziliensis*, *veltalis*, *demonalis*, *evanalis*, p. 174, *H. ? lignealis*, Rio Janeiro, *H. ? ricalis*, Costa Rica, p. 176, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Hypenodes separatalis*, Korea, HERZ, p. 331, pl. i, fig. 7, Annuaire Mus. St. Petersb. ix; *H. arrhecta*, Kauai, MEYRICK, p. 347, Fauna Hawaiianensis iii; *H. leptoxantha*, Molokai, MEYRICK, p. 130, Ent. Mag. xl: n. spp.
- Hyppa xylinoides* and *indistincta*, early stages, DYAR, pp. 814, 815, P. U. S. Mus. xxvii.
- Iphimorpha aroensis*, p. 152, *chucka*, *ethela*, p. 153, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Ischyia porphyrea*, Thursday isld., TURNER, p. 217, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Isoclora leuconeura*, Centr. Asia, PÜNGELER, p. 131, Soc. ent. xix, n. sp.
- Korcia* n. g. near *Catocala*, p. 313, *K. pirata* sp. n., Korea, p. 314, pl. i, fig. 18, HERZ, Annuaire Mus. St. Petersb. ix.
- Lena* n. g. near *Hyptioxesta*, *L. poppiusi* n. sp., Lena, HERZ, p. 10, Ofv. Finska Forh. xlv.

- Lepidodes pectinata*, Rio Janeiro, SCHAUS, p. 167, Tr. Amer. ent. Soc. xxx, n. sp.
- Leptina* ? *petrovna*, Petropolis, SCHAUS, p. 152, t. c. n. sp.
- Leucania favicolor* var. n., TUTT, pp. 252-254, Ent. Rec. xvi; *L. favicolor* var., BARRETT, p. 61, Ent. Mag. xl.
- L. jordana*, Palestine, BARTEL, p. 158, Deutsche ent. Zeitschr. Iris xvii, n. sp.
- Leucanitis sculpta*, Togus-torau, PÜNGELER, p. 292, pl. vi, fig. 8, Deutsche ent. Zeitschr. xvi, n. sp.
- Lithacodia castrensis*, Parana, SCHAUS, p. 161, Tr. Amer. ent. Soc. xxx, n. sp.
- Lithocampa fatua*, Kuku-Noor, PÜNGELER, p. 288, pl. vi, fig. 4, Deutsche ent. Zeitschr. Iris xvi, n. sp.
- Lyncestis macrosticha*, Townsville, TURNER, p. 216, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Makapia argentescens*, Parana, SCHAUS, p. 166, Tr. Amer. ent. Soc. xxx, n. sp.
- Mamestra crydina* var. n., DYAR, p. 32, Canad. Ent. xxxvi; *M.*, early stages of numerous N. American, DYAR, pp. 839-859, P. U. S. Mus. xxvii.
- M. obesula*, p. 151, *dodii*, p. 152, *acutermia*, p. 153, Calgary, SMITH, Canad. Ent. xxxvi; *M. elsinora*, p. 197, *hueco*, p. 198, Arizona, BARNES, Canad. Ent. xxxvi; *M. (Discestra) eremistis*, Centr. Asia, PÜNGELER, p. 130, Soc. ent. xix; *M. isoloma*, Saravshan, PÜNGELER, p. 286, pl. vi, fig. 2, Deutsche ent. Zeitschr. Iris xvi : n. spp.
- Massala marmora*, p. 167, *carthia*, p. 168, Brazil, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Microcoelia parigana, farona, mastera*, S. America, SCHAUS, p. 151, t. c. n. spp.
- Megalodes hedychroa*, Queensland, TURNER, p. 218, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Moma tybo*, Arizona, BARNES, p. 166, Canad. Ent. xxxvi, n. sp.
- Mycterophora longipalpata*, early stages, DYAR, p. 877, P. U. S. Mus. xxvii.
- Nenia marama*, Venezuela; SCHAUS, p. 165, Tr. Amer. ent. Soc. xxx, n. sp.
- Noctua umbrosa* var. n., DYAR, p. 31, Canad. Ent. xxxvi; *N. perumbrosa* n. n. for the above, id. t. c. p. 102; *N. rosaria*, p. 825, *oblata*, p. 827, *sierra*, p. 828, early stages, DYAR, P. U. S. Mus. xxvii.
- N. dislocata*, Calgary, SMITH, p. 149, Canad. Ent. xxxvi, n. sp.
- Nodaria aneliopis*, Thursday Isld., TURNER, p. 219, Tr. R. Soc. S. Austral. xxviii; *N. selenitis, diopis*, Bahamas, HAMPSON, p. 173, Ann. Nat. Hist. xiv : n. spp.
- Oncocnemis polingii*, Arizona, BARNES, p. 169, Canad. Ent. xxxvi; *O. laticosta*, p. 63, *tetrops*, p. 64, Arizona, DYAR, P. ent. Soc. Washington vi : n. spp.
- Ophiusa analis* an sp. n. ?, HERZ, p. 305, Annuaire Mus. St. Petersb. ix.
- Orthosia wizenmanni*, larva, LUCAS, p. 232, Bull. Soc. ent. France 1904; *O. wizenmanni*, metamorphosis, CHRÉTIEN, p. 269, Naturaliste 1904.
- O. verberata*, Calgary, SMITH, p. 153, Canad. Ent. xxxvi, n. sp.
- Oslaria* n. g. type *Zothea viridifera* Grote, DYAR, p. 41, J. N. York Ent. Soc. xii.
- Oxyenemis subsimplex*, Arizona, DYAR, p. 42, t. c. n. sp.
- Pachetra leucophaea*, larva, etc., DOLLMAN, pp. 225-228.
- Pachnobia hyperborea* var. p. 60, figg. 9-11, OBERTHÜR, Études comp. i.
- Palthis angulalis*, early stages, DYAR, p. 881, P. U. S. Mus. xxvii.
- Parabasis* n. g. p. 428, *P. pratti*, pl. iv, fig. 26, p. 429, n. sp., New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Perizyma acrosticta*, pl. vi, fig. 6, *dispar*, fig. 7, Engeddi, PÜNGELER, p. 290, Deutsche ent. Zeitschr. Iris xvi, n. spp.
- Peridroma ypsilon* var. n. *albescens*, CLARK, p. 166, pl. viii, Ent. Rec. xvi;

- P. subjugata* var. n., DYAR, p. 31, Canad. Ent. xxxvi; *P. occulta*, p. 821 and *stricta subjugata*, p. 823, early stages, DYAR, P. U. S. Mus. xxvii.
- Perigrapha achsha*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi, n. sp.
- Photodes apicata*, *virescens*, *costipuncta*, *stenelea*, p. 156, *marita*, *perigeta*, Brazil, *repanda*, *P. ? mochensis*, Mexico, p. 157, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Phyllodes enganensis*, Engano, SWINHÖE, p. 424, Ann. Nat. Hist. xiv, n. sp.
- Platyja rufiscripta*, Borneo, SWINHÖE, p. 141, Tr. ent. Soc. London 1904, n. sp.
- Platyperigea anotha*, Brit. Columbia, DYAR, p. 29, Canad. Ent. xxxvi, n. sp.
- Pleroma cinerea*, Oregon, SMITH, p. 56, Psyche xi, n. sp.
- Plusia festucae* in New Zealand, PHILPOTT, p. 161, Tr. N. Zealand Inst. xxxvi.
- P. pterygota*, Oahu, MEYRICK, p. 348, Fauna Hawaiiensis iii, n. sp.
- Polia maxima*, California, DYAR, p. 40, J. N. York Ent. Soc. xii, n. sp.
- Polychrysis formosa*, larva, KEARFOTT, p. 301, Ent. News Philad. xv.
- Polydesma ? striata*, Korea, HERZ, p. 303, pl. i, fig. 4, Annuaire Mus. St. Petersb. ix, n. sp.
- Polyphenis sericata* var. n. *viridata*, RAGUSA, p. 18, pl. i, fig. 1, Natural. Sicil. xvii.
- Porosagrotis, thanatologia*, British Columbia, DYAR, p. 833, P. U. S. Mus. xxvii, n. sp.
- Praxis alampeta*, Brisbane, TURNER, p. 216, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Prodenia marina*, Parana, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx, n. sp.
- Prometopus inasseuta* Gn. = (*Caradrina chromoneura* Turn. = *Eraströides lichnomima* Turn.), TURNER, p. 215, Tr. R. Soc. S. Austral. xxviii.
- P. rubrispersa*, Queensland, *xerampelina*, West Australia, p. 214, *nodyna*, Brisbane, p. 215, TURNER, t. c. n. spp.
- Propatria*, characters, TURNER, p. 213, t. c.
- Prothymia rosario*, Arizona, BARNES, p. 264, Canad. Ent. xxxvi, n. sp.
- Pseudaglossa shelfordi*, Borneo, SWINHÖE, Tr. ent. Soc. London 1904, n. sp.
- Pseudina janeira*, Brazil, SCHAUS, p. 163, Tr. Amer. ent. Soc. xxx, n. sp.
- Pseudoglaea lobata*, Arizona, BARNES, p. 237, Canad. Ent. xxxvi, n. sp.
- Pseudotamila avemensis*, Manitoba, DYAR, p. 41, J. N. York Ent. Soc. xii, n. sp.
- Rhaesena apicalis*, Borneo, SWINHÖE, p. 143, Tr. ent. Soc. London 1904, n. sp.
- Rhizagrotis socorro*, p. 171, *salina*, p. 172, Arizona, BARNES, Canad. Ent. xxxvi, n. spp.
- Rhynchagrotis scopeops*, Brit. Columbia, DYAR, p. 31, Canad. Ent. xxxvi, n. sp.
- Sarothripus revayana* var. n. *asiatica*, KRULIKOVSKY, p. 91, Rev. Russe Ent. iv.
- Simplicia rectalis*, autumnal var., FUCHS, p. 37, Jahrb. Nassau. Ver. lvii.
- Spirama sumbana*, Sumba, p. 422, *kuluensis*, Flores, p. 423, SWINHÖE, Ann. Nat. Hist. xiv, n. spp.
- Spragueia inversa*, *margarita*, p. 163, *taragma*, *tarasca*, p. 164, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Stellidia funerea*, *nivosita*, *diana*, Parana, SCHAUS, p. 166, t. c. n. spp.
- Stibadium ochoa*, Arizona, p. 241, *manti*, Texas, p. 242, BARNES, Canad. Ent. xxxvi; *S. viridescens*, Mexico, SCHAUS, p. 153, Tr. Amer. ent. Soc. xxx : n. spp.
- Strabea punctilinea*, Parana, SCHAUS, p. 167, t. c. n. sp.
- Taeniocampa communis*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi; *T. terminatissima*, New Mexico, DYAR, p. 104, P. ent. Soc. Washington vi; *T. alamosa*, Arizona, BARNES, p. 201, Canad. Ent. xxxvi : n. spp.

- Tarache angularis, triangularis, mediana, puella*, p. 158, *praxina, caterva, villica, violetta*, p. 159, *viridans, T. ? benita*, p. 160, S. America, *T. ? pyralina*, Mexico, p. 159, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Thalpochares costagna*, p. 161, *guarama, grisella, T. ? nigripalpis, lorna*, S. America, *T. ? mirella*, Mexico, p. 162, SCHAUS, t. c. n. spp.
- Thermesia flavilineata*, Bahamas, HAMPSON, Ann. Nat. Hist. xiv, p. 170, n. sp.
- Thyria cressita, satana*, Parana, SCHAUS, p. 164, Tr. Amer. ent. Soc. xxx, n. spp.
- Tornacontia, mediatrice*, Arizona, DYAR, p. 62, P. ent. Soc. Washington vi, n. sp.
- Toxocampa moellendorffi*, Korea, HERZ, p. 318, pl. 1, fig. 1, Annuaire Mus. St. Petersb. ix, n. sp.
- Toxophleps pallida, T. ? bilinia*, S. E. Brazil, SCHAUS, p. 160, Tr. Amer. ent. Soc. xxx, n. spp.
- Tricholita chipeta*, Colorado, BARNES, p. 202, Canad. Ent. xxxvi, n. sp.
- Trigonophora periculosa*, early stages, DYAR, p. 871, P. U. S. Mus. xxvii.
- Triphaena comes*, broods and varr., PROUT, pp. 1-5, Ent. Rec. xvi.
- Vestura n. g. V. adeba n. sp.*, Singapore and Borneo, SWINHOE, p. 142, Tr. ent. Soc. London 1904.
- Xerociris n. n.* for *Ciris* Gr., COCKERELL, p. 76, Ent. News Philad. xv.
- Xylina fletcheri*, p. 56, *ancilla*, p. 57, *vertina, merceda*, p. 58, Canada, Oregon, SMITH, Psyche xi, n. spp.
- Xylophasia unita, enigma*, p. 54, *rorulenta*, p. 55, Calgary, SMITH, t. c. n. spp.
- Zanclognatha ? punctalis*, Korea, HERZ, p. 324, pl. i, fig. 9, Annuaire Mus. St. Petersb. ix, n. sp.
- Zosteropoda hirtipes*, early stages, DYAR, p. 866, P. U. S. Mus. xxvii.

GEOMETRIDÆ, EPIPLEMIDÆ, URANIIDÆ.

[Cf. CHRÉTIEN (275), DIETZE (380), DOGNIN (398, 399), DYAR (432), HAMPSON (653), HERZ (680, 680A), HIMSL (687), MEYRICK (947), OBERTHÜR (987), PEARSALE (1013), PROUT (1108), PÜNGELER (1110), REBEL (1122), ROTHSCHILD (1194), SWINHOE (1362, 1363), TAYLOR (1369), THIERRY-MIEG (1385), TURNER (1409, 1411), WARREN (1474-1477).]

Larvæ of French species, FRIONNET (555).

DYAR gives notes synonymical etc., on the Hulst collection for which reference must be made to P. ent. Soc. Washington vi, pp. 222-227.

Review, with changes and synonymy, of Hulst's classification of N. American *Geometridæ*, PEARSALE, pp. 208-210, Canad. Ent. xxxvi.

Revision of *Australian Geometridæ*, TURNER, P. Soc. Victoria xvi, synonymy not given in our pages.

Abaxas grossulariata var. *n. minor*, pl. i, fig. 17, p. 353, HERZ, Annuaire Mus. St. Petersb. ix; *A. marginata nigrounicolorata*, HAVERKAMPF, p. 187, pl. i, Ann. Soc. ent. Belgique xlviii.

A. macularia, Korea, HERZ, p. 354, pl. i, fig. 16, Annuaire Mus. St. Petersb. ix; *A. transvisata*, Peru, WARREN, p. 543, Nov. Zool. xi : n. spp.

Acidalia, varr. of European, FUCHS, p. 17, Soc. ent. xix; *A. deversaria* var. *laureata*, pl. ii, fig. 6, *A. diffluenta* distinguished, FUCHS, p. 38, Jahrb. nassau. Ver. lvii; *A. immutata* var. *n. syriacata*, NEUBURGER, p. 115, Soc. ent. xix; *A. emutaria*, egg and young larva, SICH, p. 108, Entomologist 1904; *A. metohiensis*, p. 248, pl. v, fig. 15, REBEL, Ann. Hofmus. Wien xix.

A. cajanderi, p. 13, *anaïtaria*, p. 14, Lena, HERZ, Ofv. Finska Forh. xlv, No. 15, n. spp.

- Acrosemia dickorda*, Bahamas, HAMPSON, p. 177, Ann. Nat. Hist. xiv, **n. sp.**
Acrotomodes lichenifera, Peru, WARREN, p. 564, Nov. Zool. xi, **n. sp.**
Æschropteryx flexilinea, olivata, Mexico, WARREN, p. 128, t. c.; *Æ. præcurvata*, Paraguay, WARREN, p. 564, t. c. **n. spp.**
Agathia elenaria, Old Calabar, SWINHÖE, p. 542, Tr. ent. Soc. London 1904; *A. pauper*, Warri, WARREN, p. 463, Nov. Zool. xi : **n. spp.**
Agia eborata ? = *Cysteopteryx viridata*, TAYLOR & DYAR, pp. 46, 47, J. N. York Ent. Soc. xii.
Agraptoclora pallida, p. 463, *rubriceps*, p. 464, Angola, WARREN, Nov. Zool. xi, **n. spp.**
Alcis huamani, Peru, DOGNIN, p. 363, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Aletis rubricaput, Gold Coast, SWINHÖE, p. 578, Tr. ent. Soc. London 1904, **n. sp.**
Alex aurantiata, Obi, WARREN, p. 484, Nov. Zool. xi, **n. sp.**
Amaurinia expallidata, Trinidad, WARREN, p. 81, t. c.; *A. angulata, brunnea*, p. 525, *commixta*, p. 526, Peru, WARREN, t. c. : **n. spp.**
Ameria seminigra, Peru, WARREN, p. 81, t. c. **n. sp.**
Amraica superans var. *n. dubitans*, HERZ, p. 365, pl. i, fig. 14, Annuaire Mus. St. Petersb. ix.
Anapalta n. g. Hydriomeninæ, p. 43, *perdecora, roseoliva*, Bolivia, p. 44, *sombreira*, Peru, *violetta*, Bolivia, p. 45, **n. spp.**, WARREN, Nov. Zool. xi; *A. subfusca*, Peru, WARREN, p. 576, t. c. **n. sp.**; *A. ruficoesia*, Argentina, DOGNIN, p. 359, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Anisodes aurantiata, bipunctata, p. 27, Peru, *flavidiscata*, Huatuxco, *hieroglyphica*, p. 28, *imparistigma*, Peru, *magnidiscata*, Bolivia, p. 29, *mediolineata*, Peru, *ochricomata*, Santa Marta, p. 30, *rhodostigma*, Bolivia, *subnescens*, Peru, p. 31, *torsivena*, Bolivia, p. 32, WARREN, Nov. Zool. xi; *A. decorata*, p. 507, *fulgurata, gigantula*, p. 508, *maculidiscata, multipunctata*, p. 509, *pomidiscata, rufistigma, rufulata*, p. 510, Peru, WARREN, t. c. **n. spp.**
Anisolasia n. g. Hydriomeninæ, for *Cataclysmæ napassa* Dogn., WARREN, p. 46, Nov. Zool. xi.
Anisoperas adulta, Colombia, *A. ? aurantiaca*, Ecuador, *A. latibrunnea*, Peru, WARREN, p. 129, t. c.; *A. dentilineata*, Mexico, p. 564, *olivata*, Bolivia, *undilinea*, Argentina, p. 565, WARREN, t. c. : **n. spp.**
Aphilopota ambusta, Angola, WARREN, p. 472, t. c. **n. sp.**
Apicia, distinguished from *Caberodes*, *A. fractilineata* ♂, *A. subfasciata* ab. nov. *obscurata*, WARREN, p. 130, t. c.; *A.*, cf. *Loxapicia, Mesedra. A. bottgeri*, Peru, *citrina*, Venezuela, WARREN, p. 566, Nov. Zool. vi, **n. spp.**
Apiciopsis n. g. near *Apicia*, *A. angusta*, Peru, *obliquaria*, Bolivia, **n. spp.**, WARREN, p. 131, t. c.
Aplodes darwinata, life-history, DYAR, p. 121, Psyche xi.
A. punctata, Jamaica, WARREN, p. 19, Nov. Zool. xi, **n. sp.**
Aplogompha aurifera, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904, **n. sp.**
Aplorama n. g. type *Byssodes nazada* Druce, WARREN, p. 91, Nov. Zool. xi.
Archichlora marcescens, Niger, WARREN, p. 465, t. c. **n. sp.**
Argyrotome ferruginea var. *n. albinata*, WARREN, p. 93, t. c.
Arhodia modesta, Townsville, WARREN, p. 485, t. c. **n. sp.**
Asestra ustularia, Bolivia, WARREN, p. 132, t. c. **n. sp.**
Asthenia euthecta, Brisbane, TURNER, p. 243, P. Soc. Victoria xvi, **n. sp.**
Astyochia membranacea, Peru, WARREN, p. 545, Nov. Zool. xi; *A. subli-turata*, Peru, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : **n. spp.**
Atossa alpherakii, Korea, HERZ, p. 376, pl. i, fig. 8, Annuaire Mus. St. Petersb. ix, **n. sp.**
Axiodes, def. amended, WARREN, p. 480, Nov. Zool. xi.
A. ennomaria, S. Africa, id. l. c. **n. sp.**
Azelina nigra, Bolivia, p. 132, *ochriscripta*, Peru, p. 133, WARREN, t. c.; *A. albisepta*, p. 566, *coronata*, p. 567, Peru, WARREN, t. c.; *A. vulpecula*,

- Peru, DOGNIN, p. 369, Ann. Soc. ent. Belgique xlviii; *A. notodontina*, Peru, THIERRY-MIEG, p. 183, Naturaliste 1904 : **n. spp.**
- Bassania fortis*, Peru, WARREN, p. 567, Nov. Zool. xi, **n. sp.**
- Betulodes* **n. g.** for *Amphidasys crebraria* Gn., THIERRY-MIEG, p. 183, Naturaliste 1904.
- Biston calaria*, E. Africa, SWINHÖE, p. 527, Tr. ent. Soc. London 1904, **n. sp.**
- Blechroma conflua*, *conspersa*, p. 502, *nigricincta*, p. 503, Peru, WARREN, Nov. Zool. xi, **n. spp.**
- Boarmia consortaria* var. *n. marginata*, HERZ, p. 372, pl. i, fig. 6, Annuaire Mus. St. Petersb. ix; *B. selenaria*, larval habits, STEBBING, p. 154, pl. xviii b, J. Linn. Soc. London xxix.
- B. dribaria*, Madagascar, p. 532, *ugandaria*, Africa, p. 533, SWINHÖE, Tr. ent. Soc. London 1904; *B. cilicornaria*, Nikko, PÜNGELER, p. 296, pl. vi, fig. 15, Deutsche ent. Zeitschr. Iris xvi; *B. aroensis*, New Guinea, pl. iii, fig. 29, p. 322, ROTHSCHILD, Nov. Zool. xi : **n. spp.**
- Bonatea viridilinea*, Peru, WARREN, p. 568, Nov. Zool. xi; *B. maculata*, Bolivia, DOGNIN, p. 367, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Bordeta aroensis*, New Guinea, pl. iii, fig. 37, p. 319, ROTHSCHILD, Nov. Zool. xi, **n. sp.**
- Brachytenistis* **n. g.** *Ennominae*, p. 133, *B. undilinea* **n. sp.**, Peru, p. 134, WARREN, Nov. Zool. xi.
- Brachystichia* **n. g.** near *Apicia*, *B. nitida* **n. sp.**, Paraguay, WARREN, p. 134, t. c.
- Brachytrita* **n. g.** *Orthostixinae*, *B. cervinaria* **n. sp.**, E. Africa, SWINHÖE, p. 576, Tr. ent. Soc. London 1904.
- Brabiroides* **n. g.** *Tephroclystinae*, *B. peruviana* **n. sp.**, Peru, WARREN, p. 528, Nov. Zool. xi.
- Bronchelia fumistrotata*, Peru, WARREN, p. 550, t. c. **n. sp.**
- Bryoptera bisignata*, p. 106, *canidentata*, p. 107, Peru, WARREN, t. c.; *B. ruficana*, *viridirufa*, Peru, WARREN, p. 551, t. c. : **n. spp.**
- Buttia* **n. g.** *Prosoplophinae*, *B. noctuodes* **n. sp.**, S. Africa, WARREN, p. 481, t. c.
- Cabira lignicolor*, Peru, WARREN, p. 125, t. c. **n. sp.**
- Callipia aurata*, Colombia, p. 79, *flagrans*, *occulta*, Peru, p. 80, WARREN, t. c.; *C. admirabilis*, p. 538, *languescens*, p. 539, Peru, WARREN, t. c.; *C. paradisea*, *rosetta*, Peru, THIERRY-MIEG, p. 140, Naturaliste 1904 : **n. spp.**
- Callipona* **n. g.** near *Xenographia*, *C. metabolis* **n. sp.**, Queensland, TURNER, p. 236, Tr. R. Soc. S. Austral. xxviii.
- Callipseustes strigosa*, *subsignata*, Bolivia, WARREN, p. 116, Nov. Zool. xi, **n. spp.**
- Callygris* **n. g.** for *junctilineata* and *compositata* Walk., THIERRY-MIEG, p. 141, Naturaliste 1904.
- Calocalpe mochica*, p. 361, *chimu*, p. 362, Peru, DOGNIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Calyptocome conversa*, *fragmentata*, Brit. Guiana, p. 32, *inornata*, Venezuela, p. 33, WARREN, Nov. Zool. xi, **n. spp.**
- Cambogia anguinata*, *antiopata*, Bolivia, *bellissima*, p. 82, *delicatula*, *flavifulva*, p. 83, *funiculata*, *griseicosta*, p. 84, *lilacina*, Peru, *intacta*, Ecuador, p. 85, WARREN, t. c. **n. spp.**
- Campylona contingens*, Ecuador, WARREN, p. 14, t. c.; *C. brunnea*, Maripa, WARREN, p. 500, t. c. : **n. spp.**
- Caradrinopsis* **n. g.** *C. obscuraria* **n. sp.**, E. Africa, SWINHÖE, p. 534, Tr. ent. Soc. London 1904.
- Caripeta interalbicans*, Colorado, WARREN, p. 135, Nov. Zool. xi, **n. sp.**
- Catascia haydenata* ab. nov. *obliterata*, WARREN, p. 115, t. c.
- Celerena substigmatica*, Obi, WARREN, p. 485, t. c. **n. sp.**
- Certima nummifera* to *Oenothalia*, WARREN, p. 559, t. c.

- C. canisparsa*, Peru, p. 135, *delectans*, *nubifera*, *pallidifrons*, Bolivia, p. 136, WARREN, t. c. ; *C. ambusta*, p. 568, *bottgeri*, p. 569, Peru, WARREN, t. c. : n. spp.
- Chesias spartiata* var. n. *capriata*, PROUT, p. 60, Entomologist 1904.
- Chlorochæta* n. g. *Geometrina*, *C. longipennis* n. sp., Niger, WARREN, p. 464, Nov. Zool. xi.
- Chloroclystis fulminea* Dogn. to *Ischnopteris*, description, WARREN, p. 118, t. c.
- C. sierraria*, W. Africa, SWINHOE, p. 573, Tr. ent. Soc. London 1904 ; *C. metallospora*, p. 231, *cissocosma*, *mniochroa*, p. 232, *guttifera*, p. 233, *gonias*, *abtechra*, p. 234, Australia, TURNER, P. Soc. Victoria xvi ; *C. microptilota*, Peru, WARREN, p. 86, Nov. Zool. xi : n. spp.
- Chogada acaciaria* abb. n. *flavipeta*, *fumata*, WARREN, p. 474, t. c.
- Chrysocraspeda rothschildi* (1903), pl. iii, fig. 31, p. 322, ROTHSCHILD, Nov. Zool. xi.
- C. leighata*, Durban, WARREN, p. 466, Nov. Zool. xi ; *C. latiflavaria*, p. 562, Nyassaland, *zearia*, *doricaria*, p. 563, *planaria*, p. 564, Madagascar, SWINHOE, Tr. ent. Soc. London 1904 : n. spp.
- Cidariophanes mamestrina*, Peru, WARREN, p. 556, Nov. Zool. xi, n. sp.
- Cimicodes ruptimacula*, Bolivia, WARREN, p. 137, t. c. n. sp.
- Cleora umbrosaria*, characters and position, TAYLOR, p. 135, Canad. Ent. xxxvi.
- C. gracilis*, Jamaica, WARREN, p. 107, Nov. Zool. xi, n. sp.
- Cnephora facala*, Peru, DOGNIN, p. 368, Ann. Soc. ent. Belgique xlviii, n. sp.
- Codonia quercimontaria* and *punctaria* varr., *C. porata* var. *visperaria*, FUCHS, p. 40, Jahrb. nassau. Ver. lvii.
- Cœnina dentataria*, Abyssinia, SWINHOE, p. 513, Tr. ent. Soc. London 1905, n. spp.
- Cœnocalpe elongata*, Peru, DOGNIN, p. 360, Ann. Soc. ent. Belgique xlviii, n. sp.
- Colpodonta phylodontaria*, Peru, WARREN, p. 569, Nov. Zool. xi, n. sp.
- Comibena flavidisca*, Peru, WARREN, p. 20, t. c. n. sp.
- Cophocerotis instar*, Peru, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii ; *C. argentistriga*, *ebria*, p. 539, *margaritacea*, *submuscosa*, p. 540, Peru, WARREN, Nov. Zool. xi : n. spp.
- Coptopteryx nigraria*, W. Africa, SWINHOE, p. 544, Tr. ent. Soc. London 1904, n. sp.
- Coremia ferrugata* var., WOODBRIDGE, p. 10, cut p. 9, Entomologist 1904.
- Cosymbia anandaria*, Trop. Africa, SWINHOE, p. 561, Tr. ent. Soc. London 1904, n. sp.
- Craspedia cymiphora*, Bahamas, HAMPSON, p. 179, Ann. Nat. Hist. xiv ; *C. atridiscata*, p. 33, *conduplicata*, Bolivia, *deaurata*, Ecuador, *dorsinigrata*, Peru, p. 34, *internexata*, Ecuador, *trias* with var. *tincta*, S. America, p. 35, *trygodata*, Bolivia, p. 36, WARREN, Nov. Zool. xi : n. spp.
- Cratoptera subcitrina*, Peru, WARREN, p. 137, t. c. n. sp.
- Crocopteryx aurora*, Peru, WARREN, p. 570, t. c. n. sp.
- Cryptoloba dentifascia*, India, WARREN, p. 489, t. c. n. sp.
- Cryptoscopa* n. g. *C. aprepes* n. sp., Queensland, TURNER, p. 238, Tr. R. Soc. S. Austral. xxviii.
- Cusiala ? pulverosa*, Natal, WARREN, p. 472, Nov. Zool. xi, n. sp.
- Cyllopoda chibcha* ab. n. *cuneifera*, WARREN, p. 15, t. c.
- C. angustistriga*, Peru, WARREN, l. c. n. sp.
- Cymatophora commaculata* Warren, to *Melanoscia*, WARREN, p. 555, Nov. Zool. xi.
- C. matilda*, British Columbia, DYAR, p. 907, P. U. S. Mus. xxvii ; *C. ? chanchani*, Peru, DOGNIN, p. 364, Ann. Soc. ent. Belgique xlviii ;

- C. dislocata*, Peru, *muscosa*, Ecuador, WARREN, p. 108, Nov. Zool. xi;
C. modesta, Paraguay, p. 552, *reducta*, *striata*, Peru, p. 553, WARREN,
t. c. : **n. spp.**
- Darna rubriplaga*, Ecuador, *volitans*, Peru, WARREN, p. 15, t. c. ; *D. flam-*
mifera, p. 500, *præolata*, p. 501, Peru, WARREN, t. c. : **n. spp.**
- Dasysterna* **n. g.** near *Dasyuris* for *Phytometra tristis* Butl., TURNER, p. 277,
P. Soc. Victoria xvi.
- Dasyuris cæsia*, p. 278, *hedylepta*, p. 279, Victoria, TURNER, t. c.
n. sp.
- Deilinia acrocosma*, Queensland, p. 236, *catharodes*, Hobart, p. 237, TURNER,
Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Deinopygia* **n. g.** near *Ptychopoda*, *D. caudata* **n. sp.**, Venezuela, WARREN,
p. 511, Nov. Zool. xi.
- Devara*, cf. *Emplocia*.
- Devarodes* **n. g.** *Braccinæ*, *D. albibasis*, p. 96, *semialbata*, Peru, *vestigata*,
Bolivia, p. 97, **n. spp.**, WARREN, Nov. Zool. xi; *D. subtincta*, Peru,
WARREN, p. 544, t. c. **n. sp.**
- Diactinia albinodosa*, Peru, WARREN, p. 46, t. c. **n. sp.**
- Diceratucha* **n. g.** for *Ænone xenopis* Low., SWINHÖE, p. 133, Ann. Nat.
Hist. xiv.
- Dichorda obliquata*, *perpendicularata*, Mexico, WARREN, p. 503, Nov.
Zool. xi, **n. spp.**
- Dichromatopodia distans*, Santa Marta, WARREN, p. 36, t. c. **n. spp.**
- Diploctena* **n. g.** near *Xanthorhoe*, *D. argocyma* **n. sp.**, Victoria, TURNER,
p. 269, P. Soc. Victoria xvi.
- Dolichopyge canioparsa*, Ecuador, p. 46, *fulvistriga*, Bolivia, p. 47, WARREN,
Nov. Zool. xi, **n. spp.**
- Drepanodes fulvilinea*, Peru, WARREN, p. 138, t. c. **n. sp.**
- Drucia latimargo*, Peru, WARREN, p. 20, t. c. **n. sp.**
- Durbana* **n. g.** for *Fidonia setinata* Feld., WARREN, p. 470, t. c.
- Dyscia* Hub. = (*Scodionia* auctt.), WARREN, p. 476, t. c.
- D. incondita*, *perplexata*, S. Africa, id. l. c. **n. spp.**
- Dysphania chrysocraspedata*, p. 485, *deflavata*, p. 486, Sumatra, WARREN,
t. c. **n. spp.**
- Dyspteris parvula*, Brit. Guiana, WARREN, p. 527, t. c. **n. sp.**
- Ectropis subaurata* to *Myrioblephara*, WARREN, p. 475, t. c.
- E. nacara*, Ashanti, SWINHÖE, p. 530, Tr. ent. Soc. London 1904; *E.?*
fulvitincta, Durban, WARREN, p. 474, Nov. Zool. xi; *E. hemiprosopa*,
Queensland, TURNER, p. 230, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Elphos picaria*, Celebes, WARREN, p. 490, Nov. Zool. xi, **n. sp.**
- Emmiltis* (*Craspedia*) *magnidiscata*, Angola, p. 466, *mombasæ*, E. Africa,
p. 467, WARREN, t. c. ; *E. (Craspedia) cinerosaria*, *convergens*, *per-*
fumosa, Peru, WARREN, p. 512, t. c. ; *E. fumosaria*, p. 554, *sinuaria*,
caducaria, *vitiosaria*, *peararia*, p. 556, Trop. Africa, *roezaria*, Mada-
gascar, p. 557, *cassiararia*, Masai, p. 558, SWINHÖE, Tr. ent. Soc. London
1904 : **n. spp.**
- Emplocia* = (*Devara* Walk.), WARREN, p. 96, Nov. Zool. xi.
- E. coliadata*, Peru, WARREN, p. 97, t. c. **n. sp.**
- Encoma* **n. g.** *irisaria* **n. sp.**, Uganda, SWINHÖE, p. 523, Tr. ent. Soc.
London 1904.
- Encyphia* **n. g.** *argillina* **n. sp.**, Queensland, TURNER, p. 228, Tr. R. Soc.
S. Austral. xxviii.
- Ennomos*, cf. *Tmetomorpha*.
- Entogonia* **n. g.** *Ænochrominæ*, *E. schistacea* **n. sp.**, Bolivia, WARREN, p. 12,
Nov. Zool. xi.
- Ephialtas fornax* ab. *n. latimargo*, WARREN, p. 16, t. c.
- Epiplema commixtata*, *pallifrons*, p. 2, *rectilinea*, p. 3, *rostrifera*, *scabra*,
p. 4, *vulpecula*, p. 5, Peru, WARREN, t. c. ; *E. dohertyi*, *semipicta*,

- Mombasa, WARREN, p. 462, t. c.; *E. lucisquamata*, Peru, WARREN, p. 494, t. c. : **n. spp.**
- Epirrhoë heliopharia*, Uganda, SWINHOE, p. 569, Tr. ent. Soc. London 1904; *E. limitata*, Peru, WARREN, p. 517, Nov. Zool. xi : **n. spp.**
- Episothalma kabaria*, W. Africa, SWINHOE, p. 541, Tr. ent. Soc. London 1904, **n. sp.**
- Erateina cæruleopicta*, Peru, WARREN, p. 536, Nov. Zool. xi, **n. sp.**
- Erebocchora ruficostaria* ab. n. *semifumata*, WARREN, p. 517, t. c.
- E. ruficostaria* with var. *peruigrata*, p. 47, *sublactea*, p. 48, Peru, WARREN, t. c. **n. spp.**
- Eriophodes indistincta*, Santa Marta, WARREN, p. 173, t. c. **n. sp.**
- Eriopygidia isolata* Kaye (as *Arima*) = (*engelkei* Warr.), p. 517, *E. rufivena* ♀, p. 518, WARREN, t. c.
- E. engelkei*, Santa Marta, *locuples*, p. 49, *rufivena*, p. 50, Peru, WARREN, t. c.; *E. nigrirubrata*, Peru, WARREN, p. 518, t. c.; *E. subignea*, p. 359, *flavisquamata*, p. 360, S. America, DOGNIN, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Erosia dilacerata* Guen. to *Gathynia*, WARREN, p. 495, Nov. Zool. xi.
- Eubolia semilutata* ab. n. *fuscata*, HERZ, p. 374, pl. i, fig. 15, Annuaire Mus. St. Petersb. ix.
- Eubordeta* **n. g.** *E. meeki*, pl. iii, fig. 27, *eichhorni*, figg. 32, 33, *miranda*, fig. 34, New Guinea, **n. spp.** and including *Bord. hypocala*, pl. iii, fig. 26, ROTHSCCHILD, Nov. Zool. xi.
- Eucestia neddaria*, Uganda, SWINHOE, p. 574, Tr. ent. Soc. London 1904, **n. sp.**
- Euchloris periphracta*, p. 219, *argosticta*, *tanygona*, p. 220, *thalassica*, *leucospilata*, p. 221, *callisticha*, p. 222, Australia, TURNER, Tr. R. Soc. S. Austral. xxviii; *E. heterospila*, Bahamas, HAMPSON, p. 178, Ann. Nat. Hist. xiv : **n. spp.**
- Euchontha commixta*, memor., Peru, WARREN, p. 16, Nov. Zool. xi, **n. spp.**
- Eucymatoge peplodes*, p. 247, *scotodes*, p. 248, Queensland, TURNER, P. Soc. Victoria xvi; *E. ochrosoma*, Peru, WARREN, p. 86, Nov. Zool. xi; *E. albivirata*, p. 528, *decorata*, *longipennata*, p. 529, Peru, WARREN, t. c. : **n. spp.**
- Eudule flavinota*, *malefida*, S. America, WARREN, p. 81, t. c.; *E. arctiata*, *simulans*, Peru, WARREN, p. 541, t. c. : **n. spp.**
- Eugivira flavescens*, San Salvador, *gemina*, Merida, DOGNIN, p. 122, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Eulype albifusa*, Philippines, SWINHOE, p. 134, Ann. Nat. Hist. xiv, **n. sp.**
- Eumilonia* **n. g.** for *Milonia mediofasciata*, THIERRY-MIEG, p. 183, Naturaliste 1904.
- Euomæa carneata*, S. Africa, WARREN, p. 481, Nov. Zool. xi, **n. sp.**
- Eupagia nigerrima*, Abyssinia, SWINHOE, p. 526, Tr. ent. Soc. London 1904, **n. sp.**
- Eupithecia*; DIETZE figures and notices many varr. of Palæarctic, in addition to the **n. spp.** mentioned below, Deutsche ent. Zeitschr. Iris xvi, pp. 362–387, pls. iii, iv, v.
- E. cooptata*, pl. iv, figg. 24–27, South France, p. 335, *vacuata*, p. 336, pl. iii, fig. 2, *rubellata*, figg. 3–5, p. 337, Centr. Asia, *demoniata*, Japan, fig. 9, p. 339, *chesiata*, p. 340, figg. 13, 14, *diffusata*, p. 342, fig. 15, *vicariata*, p. 343, fig. 17, with var. *adjunctata*, p. 344, fig. 18, *relictata*, p. 345, fig. 19, *assectata*, p. 346, figg. 20, 21, Centr. Asia, *novata*, Taurus, p. 348, fig. 22, *recens*, p. 349, fig. 26, *scortillata*, p. 351, fig. 28, sp. ? fig. 29, p. 352, *extinctata*, p. 356, fig. 33, *illaborata*, fig. 34, p. 357, Centr. Asia, *dearmata*, Mesopotamia, p. 358, fig. 35, *laterata*, pl. iv, fig. 28, *concremata*, fig. 29, p. 360, Centr. Asia, DIETZE, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Eusenea castanea*, Peru, WARREN, p. 570, Nov. Zool. xi, **n. sp.**

- Eustroma nubilata*, life-history, DYAR, p. 29, Psyche xi.
Eutomopepla fulgorifera, Bolivia, WARREN, p. 139, Nov. Zool. xi; *E. brunnea*, Bolivia, DOGNIN, p. 367, Ann. Soc. ent. Belgique xlviii: n. spp.
Exelis extorris, Natal, WARREN, p. 482, Nov. Zool. xi; *E. fumida*, Colorado, WARREN, p. 581, t. c. n. sp.
Fisera perplexata = (*Criomacha belidearia* Feld.), WARREN, p. 492, Nov. Zool. xi.
Fulgurodes subnotata, Peru, WARREN, p. 545, t. c. n. sp.
Gabriola n. g. *Ennomina*, p. 255, *G. dyari* n. sp., Vancouver, p. 256, TAYLOR, Canad. Ent. xxxvi.
Gagitodes plumbinotata, Peru, WARREN, p. 519, Nov. Zool. xi, n. sp.
Gastrina Guen. = (*Passa* Walk.), *G. serrata* Walk. (as *Xylina*) = (*denticulata* Swinh.), SWINHÖE, p. 133, Ann. Nat. Hist. xiv.
G. catacticta, Queensland, TURNER, p. 237, Tr. R. Soc. S. Austral. xxviii, n. sp.
Gelasma stigmatica, Peru, WARREN, p. 20, Nov. Zool. xi, n. sp.
Geolyces rufaria, Old Calabar, SWINHÖE, p. 519, Tr. ent. Soc. London 1904, n. sp.
Gnophos obscurata var. n. *mediorhenana*, pl. ii, fig. 13, p. 41, FUCHS, Jahrb. Nassau. Ver. lvii; *G. lineolaria* ♀, pl. vi, fig. 21, p. 300, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi; *G. obfuscatata*, *glaucinararia*, distinctions, PROUT, p. 121, Ent. Rec. xvi; *G. pentheri*, p. 282, pl. v, fig. 19, REBEL, Ann. Hofmus. Wien xix.
G. orbicularia, p. 297, pl. vi, fig. 16, *exsuctaria*, p. 298, fig. 17, Issyk-kul, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi, n. spp.
Gonanticlea subpilosa, Batjan, WARREN, p. 488, Nov. Zool. xi, n. sp.
Gonochlora n. g. near *Iodis*, *G. minutaria* n. sp., Sierra Leone, SWINHÖE, p. 548, Tr. ent. Soc. London 1904.
Gonodola leighi, Durban, *interlineata*, p. 478, *transvisata*, p. 479, Angola, WARREN, Nov. Zool. xi, n. spp.
Gonodontis bidentata var. n. *exsul*, TSCHETVERIKOV, p. 78, Rev. Russe Ent. iv.
G. azelinaria, p. 526, *æmoniaria*, p. 527, Trop. Africa, SWINHÖE, Tr. ent. Soc. London 1904, n. sp.
Grammicopteryx n. g. for *Larentia anthocharidaria* Oberth., THIERRY-MIEG, p. 183, Naturaliste 1904.
Gymnoscelis lophopus, p. 224, *delocyma*, p. 226, *acidna*, p. 227, Australia, TURNER, P. Soc. Victoria xvi, n. spp.
Gyostega n. g. *Palyadina*, p. 93, *G. floccosa* n. sp., Peru, p. 94, WARREN, Nov. Zool. xi.
Habrosyne scripta, early stages, DYAR, p. 885, P. U. S. Mus. xxvii.
Hæmalea atridiscata, Peru, WARREN, p. 37, Nov. Zool. xi, n. sp.
Haggardia n. g. for part of *Eubyja*, with *H. melanostigma* n. sp., Angola, WARREN, p. 473, t. c.
Hammaptera æruginata, Bolivia, *apicata*, p. 51, *nigrolineata*, Paraguay, *cacuminata*, Peru, p. 52, *subalbata*, Bolivia, p. 53, WARREN, t. c. n. spp.
Hemerophila mailaria, Congo, SWINHÖE, p. 535, Tr. ent. Soc. London 1904; *H. brunnearia*, Korea, HERZ, p. 367, pl. i, fig. 5, Annuaire Mus. St. Petersb. ix; *H. alpinella*, p. 746, *kincaidiella*, p. 747, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii: n. spp.
Hemicopsis n. g. p. 525, *H. purpuraria* n. sp., E. Africa, p. 526, SWINHÖE, Tr. ent. Soc. London 1904.
Hemigynnodes, characters and position, WARREN, p. 17, Nov. Zool. xi.
Hemioplisis ? *alternata*, Peru, p. 5, *metallica*, Trinidad, p. 6, WARREN, t. c. n. spp.
Hemithea sapoliaria, Mombasa, SWINHÖE, p. 547, Tr. ent. Soc. London 1904, n. sp.

- Hemixera* n. g. *Ennominae*, *H. orthosoides* n. sp., Peru, WARREN, p. 139, Nov. Zool. xi.
- Herbita æmula*, *cervina*, Mexico, WARREN, p. 140, t. c. n. spp.
- Hetererannis* n. g. type *Boarmia obliquaria* Grote, WARREN, p. 106, t. c.
- Heterophya pustulata*, Peru, WARREN, p. 37, t. c. n. sp.
- Heterorachis rubella*, Niger, WARREN, p. 465, t. c. n. sp.
- Heteroleuca* n. g. *Nephodiinae*, *H. albida* n. sp., Peru, WARREN, p. 101, t. c.
- Heterolocha xerophilaria*, Ain-Dschidi, PÜNGELER, p. 295, pl. vi, fig. 13, Deutsche ent. Zeitschr. Iris xvi, n. sp.
- Heterusia amplificata*, Peru, *fractifascia*, *liturata*, Ecuador, p. 89, *ludisignata*, *subspurcata*, p. 90, *thyridata*, p. 91, Peru, WARREN, Nov. Zool. xi; *H. binotata* with var. *suffusa*, p. 536, Peru, *clarimargo*, Costa Rica, *tessellata*, Peru, p. 537, WARREN, t. c.; *H. picata*, Bolivia, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : n. spp.
- Heterusia*, see also *Bombyces*.
- Himeromima* n. g. for *Mecoceras aulis* Druce, WARREN, p. 141, Nov. Zool. xi.
- Hirasa?* *denticulata*, Natal, WARREN, p. 473, t. c. n. sp.
- Homospora* n. g. near *Arrhodia*, p. 229, *H. procrita* n. sp., Townsville, p. 230, TURNER, Tr. R. Soc. S. Austral. xxviii.
- Hyalopola* n. n. for *Hyalospila* Warr., WARREN, p. 101, Nov. Zool. xi.
- Hyalorrhoe* n. g. near *Prohydata*, *H. stigmatica* n. sp., Costa Rica, WARREN, p. 21, Nov. Zool. xi.
- Hydata diaphana*, Peru, WARREN, p. 86, t. c. n. sp.
- Hydatocapnia subapicata*, Niger, WARREN, p. 469, t. c. n. sp.
- Hydatoscia* n. g. type *Trygodes ategna* Druce, WARREN, p. 101, t. c.
- Hydriomena*, cf. *Rhodomene*.
- Hydriomena psarodes*, p. 253, *callima*, p. 257, *trissophrica*, p. 259, *crocota*, p. 261, *plagiocarpa*, p. 263, *arachnitis*, p. 264, *plesia*, *loxocyma*, p. 265, Australia, TURNER, P. Soc. Victoria xvi; *H. ochreiplaga*, Colombia, WARREN, p. 53, Nov. Zool. xi; *H. scalata*, Oregon, WARREN, p. 519, t. c. : n. spp.
- Hygrochroma flexilinea*, p. 141, *subusta*, p. 142, Peru, WARREN, t. c.; *H. catenulata*, Bolivia, WARREN, p. 571, t. c. : n. spp.
- Hylemera auridisca*, p. 471, *capitifera*, p. 472, Niger, WARREN, t. c. n. spp.
- Hymenomima carneata*, *rufata*, p. 109, *schisticolor*, p. 110, Peru, WARREN, t. c. n. spp.
- Hyperitis trianguliferata*, p. 64, *H. amicarica*, p. 65, life-histories, DYAR, Psyche xi.
- Hyperythra rubricata* not a var. of *lutea*, ab. n. *decolor*, WARREN, p. 491, Nov. Zool. xi.
- Hyphedyle subornata*, Peru, WARREN, p. 499, t. c. n. sp.
- Hyphenophora æmonia*, Uganda, SWINHOE, p. 498, Tr. ent. Soc. London 1904, n. sp.
- Hypochrosis ætionaria*, Madagascar, SWINHOE, p. 522, t. c. n. sp.
- Hypolepis* n. g. near *Psaliodes*, *H. albistriga*, p. 54, *castanea*, *conspersata*, *plumbescens*, p. 55, *prunicolor*, *sordida*, p. 56, *strigosa*, p. 57, n. spp., Peru, WARREN, Nov. Zool. xi; *H. brunneata*, *completa*, Peru, WARREN, p. 520, t. c. n. spp.
- Hypometalla* n. g. for *Acidalia mimetaria* Feld., WARREN, p. 563, t. c.
- Hyposidra smithi*, Congo, WARREN, p. 480, t. c. n. sp.
- Ira distolata*, p. 142, *funerea*, *igni-plaga*, p. 143, *ochreiplaga*, *opalizaas*, p. 144, Peru, *somnolenta*, Colombia, *viridirufa*, Peru, p. 145, WARREN, t. c. n. spp.
- Iridopsis schistacea* ab. n. *radiata*, WARREN, p. 554, t. c.
- I. alternata*, p. 553, *striata*, p. 554, WARREN, t. c.; *I. candidata*, Bolivia, p. 110, *schistacea*, Peru, p. 111, WARREN, t. c.; *I. commixtata*,

- Tucuman, DOGNIN, p. 121, Ann. Soc. ent. Belgique xlviii ; *I. rectura*, p. 363, *obliquata*, p. 364, Argentina, DOGNIN, t. c. : **n. spp.**
- Ischnopteris abnormipalpis*, p. 116, *albiguttata*, *fidelis*, p. 117, *oppositata*, p. 118, Peru, WARREN, Nov. Zool. xi ; *I. albipennis*, p. 556, *discolor*, *festiva*, p. 557, *præalutea* with ab. n. *albirupta*, *viridifascia*, p. 558, Peru, WARREN, t. c. : **n. spp.**
- Ischnopteryx viriosa*, Peru, DOGNIN, p. 365, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Isochromodes atristicta* with ab. *dissipata*, p. 146, *auxilians* with var. *denotata*, p. 147, *crassa*, *fraterna*, p. 148, *grisea*, *latifascia*, p. 149, *pallidifimbria*, *palumbata*, p. 150, *terminata*, *vestigata*, p. 151, Peru, WARREN, Nov. Zool. xi ; *I. duplicata*, *maculosata*, p. 572, *miniata*, p. 573, Peru, WARREN, t. c. : **n. spp.**
- Isodiscodes* **n. g.** *Hydriomeninæ*, *I. polycyema* **n. sp.**, Peru, WARREN, p. 521, t. c.
- Josia erectistria*, *longistria*, Ecuador, p. 17, *vulturata*, Peru, p. 18, WARREN, t. c. **n. spp.**
- Lampropteryx trilineata*, Colorado, WARREN, p. 57, t. c. **n. sp.**
- Larentiida*, review of variation in, PROUT, pp. 151–156, Entomologist 1904.
- Larentia multistrigaria* varr., TUTT, pp. 303–305, Ent. Rec. xvi ; *L. corydalaria* var. n. *bogumilaria*, REBEL, p. 267, pl. v, figg. 16, 17, Ann. Hofmus. Wien xix ; *L. badiata* var. n. *alpestris*, NEUBURGER, p. 20, Soc. ent. xix ; *L. corylata* var. n. *albida*, HERZ, p. 17, Ofv. Finska Forh. xlv, No. 15 ; *L. infidaria*, pl. iii, figg. 33–35, p. 68, *letaria*, fig. 36, *larentiaria*, p. 71, fig. 37, *cyanata*, figg. 38, 39, OBERTHÜR, Études comp. i.
- L. expiata*, Aksu, p. 292, pl. vi, fig. 9, *defricata*, Nikko, p. 293, fig. 10, *occata*, fig. 11, *querulata*, fig. 12, p. 294, Centr. Asia, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Lasiops* ? *puechi*, Peru, DOGNIN, p. 368, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Leucoctenorrhœ* **n. g.** near *Amaurinia*, p. 526, *L. quadrilinea* **n. sp.**, Peru, p. 527, WARREN, Nov. Zool. xi.
- Leucolithodes* **n. g.** for *Bryoptera pantherata* Feld., WARREN, p. 582, t. c.
- Leucothoa persordida*, Bolivia, WARREN, p. 6, t. c. **n. sp.**
- Leucoreus* **n. g.** *Ænochrominæ*, p. 12, *L. rhodosticta* **n. sp.**, Peru, p. 13, WARREN, t. c.
- Leucolopsis bilineata*, Peru, WARREN, p. 101, t. c. ; *L. approximans*, Peru, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Lignyopectera thaumastaria*, p. 278, pl. v, fig. 18, REBEL, Ann. Hofmus. Wien xix.
- Ligonia bottgeri*, Peru, WARREN, p. 513, Nov. Zool. xi, **n. sp.**
- Lipomelia scintillans*, Brit. Guiana, p. 37, *subfuscata*, Bolivia, p. 38, WARREN, t. c. **n. spp.**
- Lissochlora flavilimes*, Peru, WARREN, p. 21, t. c. ; *L. punctata*, St. Lucia, WARREN, p. 504, t. c. : **n. spp.**
- Lomographa acutipennis*, *albifrons*, S. America, WARREN, p. 92, t. c. **n. spp.**
- Lophochorista* **n. g.** near *Hydata*, for *Racheospila calliope* Druce, WARREN, p. 22, t. c.
- Lophopygia* **n. g.** near *Lophotosoma*, *L. griseata* **n. sp.**, Peru, WARREN, p. 495, t. c.
- Lophotosoma* **n. g.** near *Epiplema*, *L. ustanalís* **n. sp.**, Peru, WARREN, p. 7, t. c.
- Loxapicia* **n. g.** for part of *Apicia*, *L. humerata*, Bolivia, *straminea*, Ecuador, **n. spp.**, WARREN, p. 152, t. c.
- Loxaspilates bluethgeni*, Nikko, PÜNGELER, p. 299, pl. vi, fig. 19, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Lozogramma carneata*, *erubescens*, *sinuata*, Colorado, WARREN, p. 561, Nov. Zool. xi, **n. spp.**

- Luxiaria pudens*, Niger, SWINHÖE, p. 504, Tr. ent. Soc. London 1904, n. sp.
Lycanges dapharia, p. 552, *sevandaria*, *erinaria*, *commaria*, p. 553, Trop. Africa, SWINHÖE, t. c. n. spp.
- Lygris prunata* var. n. *digna*, THIERRY-MIEG, p. 141, Naturaliste 1904.
Macaria minorata var. n. *incololata*, DYAR, p. 906, P. U. S. Mus. xxvii.
M. biflaria, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv, n. sp.
Malacodea regelaria at St. Petersburg, characters, KUSNEZOV, pp. 40–43, cuts, Rev. Russe Ent. iv, & BLOECKER, p. 210, t. c.
Marmopteryx elongata, Peru, THIERRY-MIEG, p. 141, Naturaliste 1904, n. sp.
Mecoceras, cf. *Himeromima*.
Melanchroia geometroides larva, DYAR, p. 77, P. ent. Soc. Washington vi.
Melanippe rivata, *fluctuata* varr., WOODBRIDGE, p. 9, cuts, Entomologist 1904.
Melanoscia n. g. near *Iridopsis*, p. 111, *M. albimacula*, *felina*, p. 112, *occlusa*, p. 113, n. spp., Peru, WARREN, Nov. Zool. xi.
Melanolophia canadaria var. n. *subgenericata*, DYAR, p. 910, P. U. S. Mus. xxvii.
- Melinodes contacta*, Bolivia, WARREN, p. 153, Nov. Zool. xi; *M. subapicata*, Peru, p. 573, WARREN, t. c. : n. spp.
Melochlora intermedia, Peru, WARREN, p. 22, t. c. : *M. albiceps*, Peru, WARREN, p. 504, t. c. : n. spp.
Merochausta purpuraria, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv, n. sp.
- Mesedra* n. g. including *Apicia venusta* Dogn., *M. confinis*, p. 153, *juvenis*, *munda*, p. 154, *subsequa*, *violacea*, p. 155, n. spp., WARREN, Nov. Zool. xi.
- Mesoleuca simulata* var. n. *otisi*, DYAR, p. 898, P. U. S. Mus. xxvii.
Metallochloa circumscripta, Solomon islds., WARREN, p. 486, Nov. Zool. xi, n. sp.
- Metanema quercivoria* and *Endropia textrivaria* queried as one, TAYLOR, p. 134, Canad. Ent. xxxvi; *M. quercivoria* and *textrivaria* are one, PEARSALE, p. 162, Canad. Ent. xxxvi; *M. fuliginosa* to *Mimogonodes*, WARREN, p. 576, Nov. Zool. xi.
- M. fuliginosa*, Peru, WARREN, p. 156, Nov. Zool. xi, n. sp.
Miantonota decorata, Huatuxco, WARREN, p. 22, Nov. Zool. xi; *M. nigri-squama*, Peru, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii : n. spp.
- Microdes diplodonta*, Tasmania, TURNER, p. 239, P. Soc. Victoria xvi, n. sp.
Microgonia affinis ♀, *siccifolia* ♂, p. 574, *umbrosa* var. n. *interclerata*, p. 575, WARREN, Nov. Zool. xi.
- M. distans* and ab. *confusa*, p. 156, Bolivia, *guenei*, p. 157, Mexico, *siccifolia*, *subdecorata* with ab. *prunicolor*, p. 158, Peru, *subdentilinea*, Ecuador, *subductaria*, R. Cachabi, p. 159, *versilinea*, Bolivia, p. 169, WARREN, t. c.; *M. particolor*, Paramaribo, p. 574, *subumbrata*, Peru, p. 575, WARREN, t. c.; *M. diluta*, Paraguay, DOGNIN, p. 366, Ann. Soc. ent. Belgique xlviii : n. spp.
- Microxydia*? *colorata*, p. 160, *M. fulvicollis*, p. 161, Peru, WARREN, Nov. Zool. xi; *M. rufifimbriata*, p. 575, *strigosa*, p. 576, Peru, WARREN, t. c. : n. spp.
- Milionia aroensis*, pl. iii, fig. 41, *ventralis*, fig. 38, *parva*, fig. 30, *diva*, figg. 39, 40, New Guinea, ROTHSCHILD, p. 321, Nov. Zool. xi, n. spp.
- Mitocera* n. g. near *Psiloclada*, *M. horaria* n. sp., Madagascar, SWINHÖE, p. 522, Tr. ent. Soc. London 1904.
- Mimandria insularis*, Madagascar, SWINHÖE, p. 541, t. c. n. sp.
Mimoprora n. g. near *Isochromodes*, *M. rubra* n. sp., Peru, WARREN, p. 161, Nov. Zool. xi.
- Mimosema flexa*, *rufa*, Peru, WARREN, p. 162, t. c. n. spp.
Mixopsis leodorata Guen. (as *Cirsodes*) = (*Laudosia typtaria* Feld.), WARREN, p. 576, t. c.

- M. bella*, Peru, WARREN, p. 162, t. c.; *M. pulverata*, Peru, WARREN, p. 576, t. c. : **n. sp.**
- Monroa n. g.* for *Cymatophora, quinquelinearia* Pack., WARREN, p. 555, t. c.
- Morphomima n. g.* near *Cælura*, p. 7, *M. fulvitacta n. sp.*, Colombia, p. 8, WARREN, t. c.
- Nearcha prosedra*, p. 226, *nephocrossa*, p. 227, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Nelo versicolor*, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904, **n. sp.**
- Nematocampa completa*, Ecuador, WARREN, p. 163, Nov. Zool. xi; *N. ? confusa*, *N. cuprina*, Peru, WARREN, p. 577, t. c. : **n. spp.**
- Nemoria afflictaria*, Sierra Leone, SWINHÖE, p. 549, Tr. ent. Soc. London 1904, **n. sp.**
- Neobapta n. g.* *Deiliniinæ*, p. 92, *N. indecora n. sp.*, Demarara, p. 93, WARREN, Nov. Zool. xi.
- Neocrasis heterograptæ*, Peru, WARREN, p. 23, t. c. **n. sp.**
- Neodirades n. g.* *N. spurcata n. sp.*, Peru, WARREN, p. 8, t. c.
- Neodezia n. g.* for *Odezia albovittata*, WARREN, p. 541, t. c.
- Neofidonia n. g.* *Ascotinæ*, *N. nigrisigma n. sp.*, Peru, WARREN, p. 113, t. c.; *N. olivescens*, Ecuador, WARREN, p. 555, t. c. : **n. sp.**
- Neonemoria n. g.* near *Neocrasis*, p. 23, *N. plana n. sp.*, Bolivia, p. 24, WARREN, t. c.
- Neoplema n. g.* near *Epiplema*, *N. candidata n. sp.*, Peru, WARREN, p. 496, t. c.
- Neopolita n. g.* *Deiliniinæ*, *N. bisecta n. sp.*, Angola, WARREN, p. 470, t. c.
- Neotaxia n. g.* p. 365, *N. plana n. sp.*, Tucuman, p. 366, DOGNIN, Ann. Soc. ent. Belgique xlviii.
- Nipteria apicilineata* Dogn. to *Heteroleuca*, WARREN, p. 545, Nov. Zool. xi.
- N. astyochioides*, *flaviplaga*, *flexilis*, p. 102, *oblitaria*, Peru, *subocellata*, Bolivia, p. 103, *transducta*, *turpis*, p. 104, Peru, WARREN, Nov. Zool. xi; *N. basiplaga*, *dispansa*, p. 546, *exclamationis*, *nigrisignata*, *occulta*, p. 547, *pallida*, *partita*, p. 548, *sibylla*, *trisecta*, p. 549, *umilinea vestigiata*, p. 550, Peru, WARREN, t. c.; *N. rotundata*, Ecuador, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Nyssia lapponaria*, COCKAYNE, pl. vi, pp. 149, 150, Entomologist 1904; *N. lapponaria*, variation, COCKAYNE, p. 249, cuts, t. c.
- Ochyria thorenaria*, Madagascar, SWINHÖE, p. 570, Tr. ent. Soc. London 1904, **n. sp.**
- Odontopera integraria* Guen. to *Colotois*, WARREN, p. 479, Nov. Zool. xi.
- Odontoptila marginata*, Bolivia, WARREN, p. 38, t. c. **n. sp.**
- Edicentra gerydaria*, Ashanti, SWINHÖE, p. 530, Tr. ent. Soc. London 1904, **n. sp.**
- Enone xenopis* cf. *Diceratucha*.
- Enoptila costata*, *filata*, *leprosata*, p. 120, *prunicolor*, p. 121, Peru, WARREN, Nov. Zool. xi; *E. ignea*, Peru, WARREN, p. 559, t. c. : **n. spp.**
- Oligopleura biplagiata*, Peru, WARREN, p. 58, t. c. **n. sp.**
- Oospila atroviridis*, Peru, WARREN, p. 24, t. c.; *O. restricta*, p. 504, *rufiplaga*, p. 505, Peru, WARREN, t. c. : **n. spp.**
- Ophthalmodes albata*, Sumatra, WARREN, p. 490, t. c. **n. sp.**
- Ophthalmophora contrariata*, p. 94, *lineata*, *orion*, p. 95, *transversata*, p. 96, Peru, WARREN, t. c. **n. spp.**
- Opisthoxia casta*, Mexico, *laticlava*, Peru, p. 542, *vigilans*, Ecuador, p. 543, WARREN, t. c. **n. spp.**
- Oreonoma n. g.* near *Heterusia*, *O. submarmorata n. sp.*, Peru, WARREN, p. 538, t. c.
- Orsonoba zapluta*, *luteola*, p. 234, *leucoprepes*, p. 235, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**

- Ortholitha bipunctaria* ab. n. *griseus*, NEUBURGER, Soc. ent. xix, p. 44 ;
O. coarctata, early stages, habits, BRANTS, pp. 63-68, Tijdschr. ent. xlvii.
- Paracomistis subtractata* ♀, WARREN, p. 163, Nov. Zool. xi.
- P. plumosa*, Peru, WARREN, p. 578, t. c. n. sp.
- Paracomucha* n. g. near *Entephria*, for *Cidaria chalybearia* Moore, WARREN, p. 488, t. c.
- Paradoxodes* n. g. near *Pseustopla*, *P. subdecora* n. sp., Peru, WARREN, p. 164, t. c.
- Paraplodes* n. g. near *Aplodes*, p. 24, *P. aurata* n. sp., Ecuador, p. 25, WARREN, t. c.
- Paromala* n. g. near *Perizoma*, *P. elongata* n. sp., Ecuador, p. 58, WARREN, t. c.
- Parourapteryx* n. g. for *Metrocampa sulphuraria* Maassen, THIERRY-MIEG, p. 183, Naturaliste 1904.
- Pergama semiusta* var. ? *latifuscia*, WARREN, p. 165, Nov. Zool. xi.
- P. plenilunata*, Peru, WARREN, l. c. n. sp.
- Peribolodes* n. g. *Fidoninae*, *P. bicolorata* n. sp., Brit. Guiana, WARREN, p. 126, t. c.
- Perigramma nigricosta*, p. 104, *semiplea*, p. 105, Bolivia, WARREN, t. c. n. spp.
- Perixera subblunata*, W. Africa, SWINHOE, p. 560, Tr. ent. Soc. London 1904 ; *P. impudens*, Galápagos, *P. ? longidiscata*, Townsville, WARREN, p. 487, Nov. Zool. xi : n. spp.
- Perizoma aspersa*, Ecuador, DOGNIN, p. 359, Ann. Soc. ent. Belgique xlviii ; *P. amplata*, *aureoviridis*, p. 59, *mirifica*, p. 60, Peru, WARREN, Nov. Zool. xi : n. spp.
- Pero olivacea*, Tucuman, WARREN, p. 578, t. c. n. sp.
- Perusia complicata*, p. 165, *graphica*, *superstes*, p. 166, Peru, WARREN, t. c. ; *P. subsordida*, Peru, WARREN, p. 579, t. c. : n. spp.
- Petelia anagogaria*, *binigrata*, p. 122, *purpurea*, p. 123, Peru, WARREN, t. c. ; *P. glabra*, Niger, WARREN, p. 476, t. c. : n. spp.
- Petrodava marginata*, Abyssinia, SWINHOE, p. 503, Tr. ent. Soc. London 1904, n. sp.
- Phaechlena bialbifera*, Ecuador, WARREN, p. 18, Nov. Zool. xi, n. sp.
- Phellinodes leucophasiata*, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904 ; *P. interrupta*, *obstructa*, *uniformis*, Bolivia, WARREN, p. 14, Nov. Zool. xi ; *P. absentimacula*, Ecuador, *albifuscia*, Peru, WARREN, p. 499, t. c. : n. spp.
- Phlebosphales* n. g. near *Anticlea*, p. 60, *P. engelkei*, Santa Marta, n. sp., p. 61, WARREN, t. c.
- Phorodesma triangularia*, Madagascar, SWINHOE, p. 551, Tr. ent. Soc. London 1904, n. sp.
- Phrygonis modesta*, Minas Geraës, WARREN, p. 91, Nov. Zool. xi ; *P. argyrosticta*, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv : n. spp.
- Phyllodonta songaria* (= *semicava* Warr.) var. n. *obscura*, DOGNIN, p. 366, Ann. Soc. ent. Belgique xlviii.
- P. carnea*, p. 166, *puritana*, p. 167, *semicava*, *vivida*, p. 168, Peru, WARREN, Nov. Zool. xi ; *P. pseudonyma*, Peru, WARREN, p. 579, t. c. : n. spp.
- Pigia semicostata*, Peru, WARREN, p. 39, t. c. n. sp.
- Pisoraca sanguinata*, Durban, WARREN, p. 467, t. c. n. sp.
- Pterocymia multilinearia*, E. Africa, SWINHOE, p. 567, Tr. ent. Soc. London 1904, n. sp.
- Pleurolopha* n. g. near *Selidosema*, *P. nebridota* n. sp., Brisbane, TURNER, p. 233, Tr. R. Soc. S. Austral. xxviii.
- Pæclochlora* n. g. *Geometrinae*, p. 505, *P. minor* n. sp., Peru, p. 506, and *Neocrasis heterograptæ* Warr., WARREN, Nov. Zool. xi.

- Polla quadrilineata* to *Sphacelodes*, WARREN, p. 172, t. c.
Polyptoca flavicornis haverkampfi, p. 187, pl. i, HAVERKAMPF, Ann. Soc. ent. Belgique xlviii.
Polypoetes picaria, Peru, WARREN, p. 18, Nov. Zool. xi; *P. fuliginosa*, Bolivia, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii : n. spp.
Porona fidoniata, Peru, WARREN, p. 560, Nov. Zool. xi, n. sp.
Prasinocyma ampla, pictifimbria, Angola, WARREN, p. 465, t. c. n. spp.
Prasinocyma pulcherraria, W. Africa, p. 544, *asyllaria*, Madagascar, p. 545, SWINHÖE, Tr. ent. Soc. London 1904, n. spp.
Problepsis flavistigma, Trop. Africa, SWINHÖE, p. 564, t. c. n. sp.
Probolosceles punctaria, Madagascar, SWINHÖE, p. 550, t. c. n. sp.
Procypha sillaria, p. 514, *informis*, p. 515, W. Africa, SWINHÖE, t. c. n. spp.
Prorocrania n. g., p. 225, *argyritis* n. sp., W. Australia, p. 226, TURNER, Tr. R. Soc. S. Austral. xxviii.
Prostoma n. g. *Scotopteryginae*, *P. fragilis* n. sp., WARREN, p. 123, Nov. Zool. xi.
Provola n. g. for *Aletis postica* Walker, SWINHÖE, p. 538, Tr. ent. Soc. London 1904.
Psaliodes serratilinea to *Hypolepis*, WARREN, p. 521, Nov. Zool. xi.
P. acutangula, p. 61, *albidulata, aurativena*, p. 62, *citrinata, clathrata*, p. 63, *fractilinea*, p. 64, *ignivenata, inferna*, p. 65, *miniata* (with varr. *fuscata, pallida*), *nevilinea*, p. 66, *nictitans, ossicolor*, p. 67, *pervasata, picta*, p. 68, Peru, *planiplaga*, Costa Rica, *semivasa*, p. 69, *serratilinea, siennata*, p. 70, Peru, *subfulvescens*, Ecuador, *trilunata*, Bolivia, p. 71, *tripartita*, p. 72, *vinosata*, p. 73, Peru, WARREN, t. c.; *P. analiplaga, lilacina*, p. 522, *nodosa, vulpina*, p. 523, Peru, WARREN, t. c.; *P. laticlata*, Peru, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : n. spp.
Psamathia impunctata, Peru, WARREN, p. 496, Nov. Zool. xi, n. sp.
Pseudapicia muscivaria, p. 169, *sororcula*, p. 170, Peru, WARREN, t. c. n. spp.
Pseudaselodes n. g. near *Asellodes*, p. 39, *P. constellata* n. sp., Peru, p. 40, WARREN, t. c.
Pseudocrociniis n. g. type *Crociniis plana* Butl., SWINHÖE, p. 518, Tr. ent. Soc. London 1904.
Pseudosterrha lucidaria, Trop. Africa, SWINHÖE, p. 566, t. c. n. sp.
Pseudoterpna bryophanes, p. 222, *myriosticta*, p. 223, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, n. spp.
Psilocerea vestitaria, Madagascar, *umbrosaria*, Uganda, p. 520, *ancaria, dysonaria*, Madagascar, p. 521, SWINHÖE, Tr. ent. Soc. London 1904, n. spp.
Psodopsis n. g. *P. incommoda* n. sp., Bolivia, WARREN, p. 560, Nov. Zool. xi.
Psodos alticolaria faucium, p. 66, fig. 44, OBERTHÜR, Études comp. i.
Pterocypha abbreviata, Paraguay, WARREN, p. 73, Nov. Zool. xi, n. sp.
Ptochophyle subumbrata, Niger, WARREN, p. 467, t. c. n. sp.
Ptychopoda lalasaria, fylloidaria, Trop. Africa, SWINHÖE, p. 559, Tr. ent. Soc. London 1904; *P. circumsticta, torrida*, Angola, *minimaria*, Mombasa, WARREN, p. 468, Nov. Zool. xi; *P. curtaria*, Jamaica, *griseocostata*, Ecuador, p. 40, *inanis*, Jamaica, *lignicolor*, Colombia, *nepticulata*, Venezuela, p. 42, *nigricosta*, Peru, p. 42, WARREN, t. c.; *P. interalbulata*, N. W. Australia, p. 487, *muricolor*, Tonkin, p. 488, WARREN, t. c.; *P. taniolata*, Peru, WARREN, p. 513, t. c. : n. spp.
Pycnoneura turpis, Bolivia, WARREN, p. 13, t. c.; *P. convergens*, Inambari, WARREN, p. 493, t. c. : n. spp.
Pyrinia formosa, Peru, p. 170, *junctaria*, Bolivia, p. 171, WARREN, t. c.; *P. derasata*, Peru, WARREN, p. 580, t. c. : n. spp.
Racheospila dependens, p. 25, *molliculata, promontoria*, p. 26, Peru, WARREN, t. c.; *R. confua*, Peru, WARREN, p. 506, t. c. : n. spp.

- Rambara syllaria*, p. 575, *thearia*, p. 576, W. Africa, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Rhinura* **n. g.** for *Plemyriopsis variegata* Warr., WARREN, p. 74, Nov. Zool. xi.
- Rhodochlora albigacula*, St. Lucia, WARREN, p. 506, t. c. **n. sp.**
- Rhodomena* **n. g.** for part of *Hydriomena*, *R. lichenosa*, p. 74, *roseoviridis*, p. 75, **n. spp.**, Peru, WARREN, t. c.
- Rhodophthitus castus*, Angola, WARREN, p. 471, t. c. **n. sp.**
- Rhopalista dismutata*, Tucuman, WARREN, p. 75, t. c. **n. sp.**
- Rhopalodes perfusa*, Peru, WARREN, p. 527, t. c. **n. sp.**
- Sabulodes arcasaria*, life-history, SEIFERT, pp. 103–105, Canad. Ent. xxxvi.
- Saccoploca* **n. g.**, p. 8, *S. consimilis*, *excisa* **n. spp.**, Peru, p. 9, WARREN, Nov. Zool. xi; *S. ? divergens*, p. 496, *S. sordida*, p. 497, Peru, WARREN, t. c. : **n. spp.**
- Sangala anea*, regia, Peru, WARREN, p. 98, t. c. **n. spp.**
- Sangalopsis curvifera*, Ecuador, *crescens*, *ficifera*, Peru, p. 99, *flaviplaga*, *signigera*, Bolivia, *luteiplaga*, Ecuador, *fulvimedia*, Peru, p. 100, WARREN, t. c.; *S. velutina*, Peru, WARREN, p. 544, t. c. : **n. spp.**
- Sarracena brevilinea*, Peru, WARREN, p. 524, t. c. **n. sp.**
- Scea semifulva*, Ecuador, WARREN, p. 19, t. c. **n. sp.**
- Sciagraphia gilletteata*, Colorado, DYAR, p. 105, P. ent. Soc. Washington vi, **n. sp.**
- Scioglyptis emmelodes*, Queensland, TURNER, p. 232, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Scordylia emporias*, Brisbane, TURNER, p. 245, P. Soc. Victoria xvi; *S. pacifica*, Bolivia, *amica*, Peru, THIERRY-MIEG, p. 183, Naturaliste 1904 : **n. spp.**
- Scotocyma* **n. g.** for *Scotosia albinotata* Walk., TURNER, p. 245, P. Soc. Victoria xvi.
- Scotorythra dissotis*, p. 351, *metacrossa*, p. 352, *paratactis*, p. 353, *leptias*, p. 354, Hawaiian islands, MEYRICK, Fauna Hawaiiensis iii, **n. spp.**
- Selidosema humarium* var. *n. emasculatum*, DYAR, p. 910, P. U. S. Mus. xxvii.
- S. combustaria*, Palestine, PÜNGELER, p. 298, pl. vi, fig. 18, Deutsche ent. Zeitschr. Iris xvi; *S. crassata*, Durban, *pinguis*, Angola, WARREN, p. 477, Nov. Zool. xi; *S. symmorpha*, *leucodesma*, Queensland, TURNER, p. 231, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Semeopus signifer*, Bolivia, WARREN, p. 42, Nov. Zool. xi; *S. carnearia*, p. 513, Peru, *incolorata*, Bolivia, p. 514, WARREN, t. c.; *S. micropis*, Bahamas, HAMPSON, p. 179, Ann. Nat. Hist. xiv : **n. spp.**
- Semiothisa sherrata*, Congo, p. 505, *cararia*, p. 507, *tattaria*, *instructaria*, p. 508, *ovidaria*, *arhoparia*, p. 509, *butaria*, p. 510, E. Africa, SWINHÖE, Tr. ent. Soc. London 1904; *S. natalensis*, Durban, WARREN, p. 479, Nov. Zool. xi; *S. indentata*, *intensata*, Peru, *nigricomma*, Guadalajara, WARREN, p. 127, t. c.; *S. formosa*, Peru, WARREN, p. 562, t. c. : **n. spp.**
- Sicya eunomaria*, Mexico, WARREN, p. 171, t. c. **n. sp.**
- Simopteryx obliterata*, Bolivia, WARREN, p. 172, t. c. **n. sp.**
- Sinoa nubilaria* var. *knupfferi*, HOYNINGEN-HUENE, p. 30, Berlin. ent. Zeitschr. xlix.
- Somatina accraria*, W. Africa, SWINHÖE, p. 565, Tr. ent. Soc. London 1904, **n. sp.**
- Spargania daira* Dr. (as *Epirrhoë*)=*bellipicta* Warr., WARREN, p. 76, Nov. Zool. xi.
- S. intensa*, p. 76, *rufifimbria*, *schistacea*, p. 77, *semipallida*, p. 78, Peru, WARREN, t. c. **n. spp.**
- Spilocraspeda* merged in *Ischromodes*, WARREN, p. 146, t. c.
- Spododes basipunctata*, Mexico, WARREN, p. 580, t. c. **n. sp.**
- Stannodes mirifica*, Peru, THIERRY-MIEG, p. 140, Naturaliste 1904, **n. sp.**

- Stegania minutissima*, E. Africa, p. 500, *rubida*, Madagascar, p. 501, SWINHOE, Tr. ent. Soc. London 1904, **n. spp.**
- Stenalcidia latimedia* ab. **n. circumfumata**, WARREN, p. 556, Nov. Zool. xi.
- S. fumibrunnea, guttata*, Bolivia, p. 114, *latimedia*, Peru, p. 115, WARREN, t. c. ; *S. invenusta*, Tucuman, DOGNIN, p. 121, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Stenoplastis albifrons*, Bolivia, p. 501, *semimaculata*, Peru, p. 502, WARREN, Nov. Zool. xi, **n. spp.**
- Stenoplastis spumata*, Bolivia, WARREN, p. 19, Nov. Zool. xi, **n. sp.**
- Sterrhia hispidata*, Angola, WARREN, p. 469, t. c. **n. sp.**
- Stilbia failleæ*, fig. 22, *philopalís*, fig. 23, *calberlæ*, fig. 24, PÜNGELER, pl. vi, p. 300, Deutsche ent. Zeitschr. Iris xvi.
- Syncléys impunctata*, Colorado, WARREN, p. 514, t. c. **n. sp.**
- Syngria candidata*, Peru, WARREN, p. 497, t. c. **n. sp.**
- Synneuria ditissima*, Peru, THIERRY-MIEG, p. 141, Naturaliste 1904, **n. sp.**
- Syrctodes* limited and redescribed, WARREN, p. 124, Nov. Zool. xi.
- Systatica* **n. g.** for *Monoctenia xanthastis* Low., TURNER, p. 229, Tr. R. Soc. S. Austral. xxviii.
- Tachyphyle subaurata*, Peru, WARREN, p. 27, Nov. Zool. xi ; *T. æretincta*, Peru, WARREN, p. 507, t. c. : **n. spp.**
- Tallegda montanata* var. **n. magnoliatoidata**, DYAR, p. 889, P. U. S. Mus. xxvii.
- Tanaorhinus humidaria*, Madagascar, SWINHOE, p. 542, Tr. ent. Soc. London 1904, **n. sp.**
- Taxeotis acrothecta*, p. 223, *orphnina, adelpha*, p. 224, *epigæa*, p. 225, Australia, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Tephрина presbitaria*, p. 511, *olindaria*, p. 512, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1905 ; *T. disparata*, Colorado, WARREN, p. 562, Nov. Zool. xi : **n. spp.**
- Tephropopsis fragilis*, Peru, WARREN, p. 562, t. c. **n. sp.**
- Tephroclystia breviculata*, natural history, CHRÉTIEN, pp. 5-7, Naturaliste 1904.
- T. tomillata*, Segovia, CHRÉTIEN, p. 133, Bull. Soc. ent. France 1904 ; *T. orbaria*, p. 571, *mendosaria, perculsaria*, p. 572, *lugubriaria*, p. 573, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1904 ; *T. niphadophilata, cootenariata*, p. 890, *casloata, columbiata, bifasciata*, p. 891, *subfoveata*, p. 892, British Columbia, DYAR, P. U. S. Mus. xxvii ; *T. curvifascia*, Jamaica, *costivallata, rubellicincta*, p. 87, *trigenuata*, Peru, *spurcata*, Chile, p. 88, WARREN, Nov. Zool. xi ; *T. brunneicosta, casta*, p. 530, *cupreata, densicauda, erectinota*, p. 531, Peru, *magnipuncta*, Bolivia, *nigrithorax*, p. 532, *pallidicosta*, p. 533, *seminigra, suffecta, triangulifera*, p. 534, Peru, WARREN, t. c. : **n. spp.**
- Tephronia ? novella*, Ecuador, WARREN, p. 115, t. c. **n. sp.**
- Tetracis inquinata*, Peru, WARREN, p. 581, t. c. **n. sp.**
- Thalaina angulosa*, larva and pupa, GOUDIE, p. 111, Victorian Natural. xxi.
- Thalassodes nivestrata* (1903), pl. iii, fig. 36, ROTHSCILD, Nov. Zool. xi.
- T. salutaris*, Uganda, SWINHOE, p. 544, Tr. ent. Soc. London 1904, **n. sp.**
- Thalera ? turpisaria*, W. Africa, SWINHOE, p. 546, t. c. **n. sp.**
- Thamnonoma nubilata*, Colorado, WARREN, p. 563, Nov. Zool. xi, **n. sp.**
- Therina somniaria*, larva, DYAR, p. 76, P. ent. Soc. Washington vi.
- Thyatira dinawa*, pl. v, fig. 43, p. 381, *ekeikei*, pl. iv, fig. 31, p. 382, New Guinea, BETHUNE-BAKER, Nov. Zool. xi ; *T. godalma*, Mexico, SCHAUS, p. 152, T. Amer. ent. Soc. xxx : **n. spp.**
- Thysanocraspeda* **n. g.** *Epipleminæ*, p. 9, *T. geminipuncta, inornata, semicastanea*, p. 10, *squamiplaga*, p. 11, **n. spp.**, Peru, WARREN, Nov. Zool. xi.
- Thysanoctena* **n. g.** for *dormita* Schaus, WARREN, p. 535, t. c.

- Thysanopyga fulvifascia*, Ecuador, p. 124, *suffecta*, Bolivia, p. 125, WARREN, t. c. n. spp.
- Tithraustes aliena*, Bolivia, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii; *T. subalbata*, Bolivia, DOGNIN, p. 358, t. c. : n. spp.
- Tmetomorpha* n. g. for *Ennomos bitias* Druce, WARREN, p. 173, Nov. Zool. xi.
- Tracheops bolteri* ♀, DYAR, p. 106, P. ent. Soc. Washington vi.
- Traminda variegata*, Trop. Africa, SWINHOE, p. 562, Tr. ent. Soc. London 1904, n. sp.
- Trichoclystis* n. g. near *Tephroclystia*, *T. peregrina* n. sp., Peru, WARREN, p. 535, Nov. Zool. xi.
- Trichosterrha* n. g. near *Sterrha*, *T. ? brunneofasciata*, *dentatilinea*, Venezuela, *T. olivata*, Peru, n. spp., WARREN, p. 515, t. c.
- Trigonomelea* n. g. *Ascotinea*, *T. semifusca* n. sp., Durban, WARREN, p. 475, t. c.
- Triphosa ochricostata*, *uniplaga*, Peru, WARREN, p. 524, t. c. n. sp.
- Trotorhombia* n. g. for *Erosia metachromata* Walk., WARREN, p. 498, t. c.
- Uliura* n. g. near *Pacitalcis*, *U. pallidimargo* n. sp., Tonkin, WARREN, p. 491, t. c.
- Urocalpe* n. g. near *Plemyriopsis*, p. 78, *U. nigriplaga* n. sp., Peru, p. 79, WARREN, t. c.
- Venilia pulcheraria*, Korea, HERZ, p. 362, pl. i, fig. 2, Annuaire Mus. St. Petersb. ix, n. sp.
- Xanthomima isabellina*, Isabel Isld., WARREN, p. 489, Nov. Zool. xi, n. sp.
- Xanthorhoe agelasta*, p. 272, *clascia*, p. 275, Australia, TURNER, P. Soc. Victoria xvi, n. spp.
- Xenostega sinna*, *tyana*, Old Calabar, SWINHOE, Tr. ent. Soc. London 1904, n. spp.
- Zamaera diaphanaria*, Askhabad, PÜNGELER, p. 295, pl. vi, fig. 14, Deutsche ent. Zeitschr. Iris xvi, n. sp.
- Zamarada ilaria*, *rufilinearia*, p. 516, *ixiaria*, *phrontisaria*, p. 517, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1904, n. spp.
- Zeuctoneura subviridis*, Peru, WARREN, p. 43, Nov. Zool. xi, n. sp.
- Zeuctophlebia tapinodes*, Queensland, TURNER, p. 228, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Zeuctostyla* n. g. near *Perigramma*, *Z. rubricollis* n. sp., Peru, WARREN, p. 105, Nov. Zool. xi.

PYRALIDÆ, THYRIDIDÆ.

[Cf. DOGNIN (398), DYAR (424, 432, 434, 436, 438), HAMPSON (653), HOLE (696), JORDAN (771), MEYRICK (947, 948), PETRY (1039), REBEL (1122), SAUBER (1212), SCHAUS (1225), SWINHOE (1361, 1364), TURNER (1410), VAN DEVENTER (1428), WARREN (1474-1477).]

Revision of Australian *Pyralidæ* and *Thyrididæ*, TURNER, P. Soc. Queensland xviii. The synonymy and taxonomical changes of this memoir are not dealt with below.

DYAR gives notes on the *Phycitine* of the Hulst collection, for which reference must be made to P. ent. Soc. Washington vi, pp. 227-229.

Ambesa busckella, Maryland, DYAR, p. 108, P. ent. Soc. Washington vi, n. sp.

Ampycophora haploschema, Queensland, TURNER, p. 117, P. Soc. Queensland xviii, n. sp.

Anaclastus n. g. for *Crambus apicistrigellus* Meyr., TURNER, p. 164, t. c.

Anerastria eurystica, Queensland, TURNER, p. 119, t. c. n. sp.

Anerastidia ebenopasta, Queensland, TURNER, p. 122, t. c. n. sp.

- Anisothrix grenadensis*, Grenada, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx, n. sp.
- Arnatula tympanophora*, Queensland, TURNER, p. 193, P. Soc. Queensland xviii, n. sp.
- Asopia manihotalis*, early stages, VAN DEVENTER, p. 79, pl. ix, fig. 1, Tijdschr. Ent. xlv.
- Atascosa quadricolorella*, New Mexico, DYAR, p. 116, P. ent. Soc. Washington vi, n. sp.
- Azochis rufidiscalis*, Bahamas, HAMFSON, p. 186, Ann. Nat. Hist. xiv, n. sp.
- Banisia salmo*, Borneo, WARREN, p. 483, Nov. Zool. xi, n. sp.
- Bonchis magnalis*, Mexico, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx, n. sp.
- Bostra disticha*, Queensland, TURNER, p. 190, P. Soc. Queensland xviii, n. sp.
- Bradina opacusalis*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, n. sp.
- Cabnia* n. g. *C. myronella* n. sp., Washington, DYAR, p. 108, J. N. York Ent. Soc. xii.
- Cacotherapia* n. g. for *Aurora nigrocinereella* Hulst, DYAR, p. 160, P. ent. Soc. Washington vi.
- Caphys titana*, Mexico, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx, n. sp.
- Catadupa viridiplaga*, Parana, SCHAUS, p. 177, t. c. n. sp.
- Caudellia* n. g. near *Unadilla*, *C. apyrella*, *albovitella* n. spp., N. America, DYAR, p. 116, P. ent. Soc. Washington vi.
- Cecidipta abnormalis*, Bolivia, DOGNIN, p. 123, Ann. Soc. ent. Belgique xlviii, n. sp.
- Ceroprepes mnaropsis*, Queensland, TURNER, p. 151, P. Soc. Queensland xviii, n. sp.
- Chilo oxyprora*, Victoria, TURNER, p. 167, t. c. n. sp.
- Chrysauge jonesalis*, Parana, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, n. sp.
- Corcyr athenitis*, Townsville, TURNER, p. 155, P. Soc. Queensland xviii, n. sp.
- Crambus lithargyrellus* var. n. *domariellus*, pl. v, fig. 20, p. 304, REBEL, Ann. Hofmus. Wien xix.
- C. xerxes*, Anklam, SAUBER, p. 108, Verh. Ver. Hamburg Unterh. xii; *C. plumbifimbrialis*, *murellus*, British Columbia, DYAR, p. 919, P. U. S. Mus. xxvii : n. spp.
- Cryptoblabes plagioleuca*, *adoceta*, Queensland, TURNER, p. 150, P. Soc. Queensland xviii, n. spp.
- Desmia microstictalis*, Bahamas, HAMFSON, p. 184, Ann. Nat. Hist. xiv, n. sp.
- Diptychophora stenura*, p. 168, *molydocrossa*, p. 169, *alypophanes*, *dialeuca*, p. 170, Queensland, TURNER, P. Soc. Queensland xviii, n. spp.
- Dysodia flammata*, Zomba, WARREN, p. 461, Nov. Zool. xi, n. sp.
- Echletodes* n. g. near *Homæosoma*, p. 124, *E. psephenias* n. sp., Brisbane, p. 125, TURNER, P. Soc. Queensland xviii.
- Endotricha chionocosma*, p. 182, *psammitis*, p. 183, *hemicausta*, p. 184, Australia, TURNER, t. c. n. spp.
- Ephestia cahiritelletta*, early stage, VAN DEVENTER, p. 80, pl. ix, fig. 2, Tijdschr. Ent. xlv.
- E. nonparilella*, Arizona, DYAR, p. 113, P. ent. Soc. Washington vi; *E. amarella*, British Columbia, DYAR, p. 921, P. U. S. Mus. xxvii : n. spp.
- Ephesiodes benjaminella*, British Columbia, DYAR, p. 922, t. c. n. sp.
- Epipaschia superantalis*, p. 249, *zelleri*, p. 250, early stages, DYAR, J. N. York Ent. Soc. xii.
- E. crypserythra*, Tasmania, TURNER, p. 198, P. Soc. Queensland xviii, n. sp.
- Eurhythma* n. g. for *Platytes latifasciella* Hamps., TURNER, p. 168, t. c.

- Eurypta viridis*, Parana, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, n. sp.
Eutrichocera n. g. *Phycitinae* for *paurolepidalis* n. sp., Bahamas, HAMPSON, p. 182, Ann. Nat. Hist. xiv.
Euzophera gigantella=(*cinerella* Hulst), DYAR, p. 158, P. ent. Soc. Washington vi.
Euzopherodes leptocosma, Townsville, TURNER, p. 127, P. Soc. Queensland xviii; *E. megalopolis*, Bahamas, HAMPSON, p. 181, Ann. Nat. Hist. xiv : n. spp.
Gephyra costinotata, Peru, *galgula*, Parana, SCHAUS, p. 175, Tr. Amer. ent. Soc. xxx, n. spp.
Glyphodes intermedius, Paraguay, DOGNIN, p. 129, Ann. Soc. ent. Belgique xlviii, n. sp.
Herculia acerasta, Queensland, TURNER, p. 189, P. Soc. Queensland xviii, n. sp.
Heterobella n. g. near *Macalla*, p. 193, *H. triglochis* n. sp., Queensland, p. 194, TURNER, t. c.
Heteromicta polioctola, Queensland, TURNER, p. 158, t. c. n. sp.
Homaeosoma stenopsis, Victoria, *farinaria*, Tasmania, TURNER, p. 126, t. c.; *H. reliquellum*, New Hampshire; DYAR, p. 112, P. ent. Soc. Washington vi : n. spp.
Hymenia exodias, Molokai, MEYRICK, p. 150, Ent. Mag. xl, n. sp.
Hyperectis n. g., p. 356, near *Stenia*, *diectias* n. sp., Maui, p. 357, MEYRICK, Fauna Hawaiiensis iii.
Hyphantidium apodectum, *seminivale*, p. 129, *pamphæes*, p. 130, Queensland, TURNER, P. Soc. Queensland xviii, n. spp.
Hypolamprus tessellata, Sumatra, SWINHOE Ann. Nat. Hist. xiv, n. sp.
Hypolophota n. g. *Galleriana*, *H. oödes*, p. 155, *amydrastis*, p. 156, n. spp., Queensland, TURNER, P. Soc. Queensland xviii.
Hypsotropa pleurosticha, p. 115, *icasmopsis*, *rhodosticha*, p. 116, *zophopleura*, *acidnias*, p. 117, Australia, TURNER, t. c. n. spp.
Latilia=(*Laosticha* Rag.), DYAR, p. 159, P. ent. Soc. Washington vi.
L. fiskeella, N. Carolina, DYAR, p. 221, t. c. n. sp.
Lepidomys sobria, Paraguay, DOGNIN, p. 126, Ann. Soc. ent. Belgique xlviii, n. sp.
Leucinodes labefactalis, Borneo, SWINHOE, p. 158, Tr. ent. Soc. London 1904, n. sp.
Leucochroma neutralis, Ecuador, DOGNIN, p. 127, Ann. Soc. ent. Belgique xlviii, n. sp.
Loxiorhiza n. g. for *Zeuzerodes cervinalis* Pag., WARREN, p. 494, Nov. Zool. xi.
Lygropia fusalis, Bahamas, HAMPSON, p. 186, Ann. Nat. Hist. xiv, n. sp.
Macalla zophera, p. 196, *ebenina*, p. 197, Queensland, TURNER, P. Soc. Queensland xviii; *M. admotalis*, p. 122, *albulatalis*, p. 123, S. America, DOGNIN, Ann. Soc. ent. Belgique xlviii : n. spp.
Margaronia amicalis, E. Africa, *cleonadalis*, Borneo, SWINHOE, p. 157, Tr. ent. Soc. London 1904, n. spp.
Megasis caudellella, *piperella*, N. America, DYAR, p. 110, P. ent. Soc. Washington vi, n. spp.
Meroptera liquidambarella, Washington, DYAR, p. 108, t. c. n. sp.
Mesolia scythrastis, Queensland, TURNER, p. 164, P. Soc. Queensland xviii, n. sp.
Mestolobes antichora, Oahu, MEYRICK, p. 361, Fauna Hawaiiensis iii; *M. sicaria*, Molokai, MEYRICK, p. 131, Ent. Mag. xl : n. spp.
Mimorista longidentalis, Peru, *pellucidalis*, Ecuador, DOGNIN, p. 128, Ann. Soc. ent. Belgique xlviii, n. spp.
Morova ? *innotata*, Townsville, WARREN, p. 483, Nov. Zool. xi, n. sp.
Nachaba fluella, *aromalis*, *arouva*, p. 176, *N. ? violascens*, p. 177, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.

- Nacoleia albicinctalis*, p. 184, *infuscalis*, *binocularis*, p. 185, Bahamas, HAMPSON, Ann. Nat. Hist. xiv, **n. spp.**
- Nephoteryx syntaractis*, p. 145, *epicrypha*, p. 147, Queensland, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Niphostola punctata*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Noorda candidalis*, Ecuador, DOGNIN, p. 131, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Nyctereutica* **n. g.** type *N. asbolopis* **n. sp.**, Queensland, TURNER, p. 192, P. Soc. Queensland xviii.
- Ollia* **n. g.**, p. 107, *O. santaritella* **n. sp.**, Arizona, p. 108, DYAR, J. N. York Ent. Soc. xii.
- Omiodes accepta*, larva, DYAR, p. 65, P. ent. Soc. Washington vi.
- O. antidoxa*, Oahu, MEYRICK, p. 358, Fauna Hawaiensis iii, **n. sp.**
- Omphaloptera virginalis*, *completalis*, p. 126, *O. ? stigmatalis*, p. 127, S. America, DOGNIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Orthaga orchidivora*, Queensland, TURNER, p. 199, P. Soc. Queensland xviii, **n. sp.**
- Ortholepis gillettella*, Colorado, DYAR, p. 107, P. ent. Soc. Washington vi, **n. sp.**
- Pachyzancla fimbrialis*, Ecuador, DOGNIN, p. 130, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Parabæra* **n. g.** near *Abæra*, *P. nitidalis* **n. sp.**, Ecuador, DOGNIN, p. 125, t. c.
- Paralipsa stenopepla*, Queensland, TURNER, p. 156, P. Soc. Queensland xviii, **n. sp.**
- Passadena* and *Getulia*, synonymy, DYAR, p. 114, P. ent. Soc. Washington vi.
- Pectinigera ardifereilla* Hulst, synonymy, DYAR, p. 159, t. c.
- Peoria discostrigella*, Arizona, DYAR, p. 115, t. c. **n. sp.**
- Phlyctenia tilialis*, British Columbia, DYAR, p. 916, P. U. S. Mus. xxvii; *P. lampadias*, Hawaiian islands, MEYRICK, p. 359, Fauna Hawaiensis iii : **n. spp.**
- Phlyctænodes darwinialis*, Anklam, SAUBER, p. 109, Verh. Ver. Hamburg Unterh. xii, **n. sp.**
- Phryganodes hypoxantha*, Ecuador, DOGNIN, p. 128, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Phycita corethropus*, p. 138, *adiacritis*, p. 140, *trachystola*, *mixoleuca*, p. 142, *recondita*, *atimeta*, p. 143, Australia, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Pionea arabescalis*, natural history, CHRÉTIEN, pp. 89-92, Naturaliste 1904.
- P. illineatalis*, *viridalis*, Ecuador, DOGNIN, p. 131, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Polygrammodes interpunctalis*, Peru, DOGNIN, p. 129, t. c. **n. sp.**
- Polyocha rhabdota*, *achrosta*, Queensland, TURNER, p. 122, P. Soc. Queensland xviii, **n. spp.**
- Poujadia callirhoda*, p. 120, *holochra*, p. 121, Australia, TURNER, t. c. **n. spp.**
- Psorosina* **n. g.** near *Psorosa*, *P. angulella* **n. sp.**, Iowa, DYAR, p. 113, P. ent. Soc. Washington vi.
- Pyta hanhamella*, *rainierella*, N. America, DYAR, p. 109, t. c.; *P. pallidella*, Utah, DYAR, p. 107, J. N. York Ent. Soc. xii : **n. spp.**
- Pyrallis costalis* var., THURNALL, p. 15, Ent. Mag. xl.
- Pyrausta machoeralis*, natural history, injuries to teak, HOLE, pp. 680-697, J. Bombay Soc. xv; *P. æralis*, Algerian var., CHRÉTIEN, p. 45, Naturaliste 1904.
- P. pyropsalis*, Bahamas, HAMPSON, p. 187, Ann. Nat. Hist. xiv, **n. sp.**

- Rhectosomia? longistrialis*, Ecuador, DOGNIN, p. 130, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Rhodoneura cypholoma*, Queensland, TURNER, p. 112, P. Soc. Queensland xviii, **n. sp.**
- Salebria triplagiella*, Manitoba, DYAR, p. 109, P. ent. Soc. Washington vi, **n. sp.**
- S. bakerella*, p. 105, *furciferella*, *vetustella*, p. 106, N. America, DYAR, J. N. York Ent. Soc. xii, **n. spp.**
- Salobrena phyreia*, Brazil, SCHAUS, p. 175, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Saluria rhodoessa*, Queensland, TURNER, p. 120, P. Soc. Queensland xviii, **n. sp.**
- Sanguesa dyopsata*, Mexico, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Sarata rhoiella*, Colorado, DYAR, p. 105, J. N. York Ent. Soc. xii, **n. sp.**
- Scenidiopsis n. g.* for *Persicoptera chionozyga* Low., TURNER, p. 184, P. Soc. Queensland xviii.
- Scirpophaga holophæalis*, Bahamas, HAMPSON, p. 181, Ann. Nat. Hist. xiv, **n. sp.**
- Scoparia liebmanni*, Corsica, PETRY, p. 245, Stettin Ent. Zeit. lxxv; *S. torniplagalis*, Washington, DYAR, p. 105, J. N. York Ent. Soc. xii; *S. normalis*, p. 71, *fernaldalis*, *tricoloralis*, *cinereomedia*, p. 72, N. America, DYAR, Ent. News Philad. xv; *S. gymnopsis*, p. 131, *isophæa*, p. 132, Molokai, MEYRICK, Ent. Mag. xl; *S. gonodecta*, p. 362, *catactis*, p. 363, *religiosa*, p. 365, Hawaiian islds, MEYRICK, Fauna Hawaiiensis iii : **n. spp.**
- Selagia lithosella*=(*Honora luteella* Hulst), DYAR, p. 160, P. ent. Soc. Washington vi.
- Semnia mexicanalis*, Mexico, *S.? mirma*, Brazil, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Semniomima mediana*, Parana, SCHAUS, p. 178, t. c. **n. sp.**
- Siculodes triumphans*, Peru, WARREN, p. 1, Nov. Zool. xi; *S. figurata*, *lacteguttata*, Peru, WARREN, p. 493, t. c. **n. spp.**
- Sindris magnifica*, Angola, JORDAN, p. 447, Nov. Zool. xi, **n. sp.**
- Spatulipalpia sophronica*, Queensland, TURNER, p. 149, P. Soc. Queensland xviii, **n. sp.**
- Staudingeria olivaceella*, *perluteella*, N. America, DYAR, p. 111, P. ent. Soc. Washington vi, **n. spp.**
- Stenia hieralis*, Bornco, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Stericta multicolor*, *nigrisquama*, S. America, DOGNIN, p. 124, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Sthenobela n. g.* near *Phycita*, p. 135, *S. niphostibes n. sp.*, Queensland, p. 136, TURNER, P. Soc. Queensland xviii.
- Striglina divisata*, Natuna Ids., WARREN, p. 484, Nov. Zool. xi, **n. sp.**
- Symphonistis n. g.* type *Nephopteryx monospila* Low., TURNER, p. 135, P. Soc. Queensland xviii.
- Tacoma*; characters and components, DYAR, p. 112, P. ent. Soc. Washington vi.
- T. nyssæcolella*, N. America, DYAR, p. 112, t. c. **n. sp.**
- Talis isodeta*, *xiphosema*, p. 175, *eucraspeda*, *orthotypa*, p. 176, *haplotypa*, p. 177, Australia, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Tetraschistis leucogramma*, Bahamas, HAMPSON, p. 183, Ann. Nat. Hist. xiv; *T. paula*, Brazil, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Titanoceros poliochyta*, Queensland, TURNER, p. 191, P. Soc. Queensland xviii, **n. sp.**
- Tolima cincaidella*, Wyoming, DYAR, p. 115, P. ent. Soc. Washington vi, **n. sp.**
- Tosale grandis*, Mexico, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx; *T. filata*, Ecuador, DOGNIN, p. 125, Ann. Soc. ent. Belgique xlviii : **n. spp.**

- Trissonea epiterpes*, p. 132, *capnoëssa*, p. 133, Australia, TURNER, P. Soc. Queensland xviii, **n. sp.**
Tylochares sceptucha, Queensland, TURNER, p. 130, t. c. **n. sp.**
Ubida holomochla, Queensland, TURNER, p. 165, t. c. **n. sp.**
Ulophora brunneella, p. 106, *tephrosiella*, p. 107, N. America, DYAR, P. ent. Soc. Washington vi, **n. spp.**
Varneria n. g. p. 114, *V. postremella n. sp.*, Kentucky, p. 115, DYAR, t. c.
Vitula serratilineella, generic position, DYAR, p. 158, t. c.
Xanthomelaina quinquepuncta, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
Zeuserodes subfulvata, Ecuador, WARREN, p. 1, Nov. Zool. xi, **n. sp.**
Zophodia orobanchella, Washington, DYAR, p. 111, P. ent. Soc. Washington vi; *Z. aureomaculella*, Texas, DYAR, p. 107, J. N. York Ent. Soc. xii : **n. spp.**

PTEROPHORIDÆ.

- Platyptilia ochrodactyla* var. *n. bosniaca*, REBEL, p. 323, Ann. Hofmus. Wien xix; *P. rhododactyla*, metamorphosis, MURTFELDT, p. 334, Canad. Ent. xxxvi.

TORTRICIDÆ.

- [Cf. DOGNIN (398), DYAR (430, 437), KEARFOTT (776, 777), PETRY (1039).]
 Instructions for collecting and preparing, KEARFOTT (778).
 Notes for popular use on the divisions of *Tortricidæ*, ROSTAGNO, Boll. Soc. zool. Ital. xii, pp. 70-76.
Acalla decosseana, pl. ii, figg. 10, 11, p. 41, FUCHS, Jahrb. Nassau. Ver. lvii.
Acleris britanna, p. 138, *fragariana*, p. 140, British Columbia, KEARFOTT, Canad. Ent. xxxvi, **n. spp.**
Ancylys maritima, Rhode island, DYAR, p. 221, P. ent. Soc. Washington vi, **n. sp.**
Atteria purpurea, p. 132, *unciana*, *fumipennis*, p. 133, S. America, DOGNIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Commophila fuscodorsana, British Columbia, KEARFOTT, p. 141, Canad. Ent. xxxvi, **n. sp.**
Conchylis altocorsicana, Corsica, PETRY, p. 248, Stettin Ent. Zeit. lxv, **n. sp.**
Cydia arctostaphylana, p. 109, *pseudotsugana*, p. 110, British Columbia, KEARFOTT, Canad. Ent. xxxvi, **n. spp.**
Enarmonia cockleana, British Columbia, KEARFOTT, p. 137, t. c. **n. sp.**
Gynandrosoma n. g. near *Pseudogalleria*, *G. punctidiscanum n. sp.*, N. America, DYAR, p. 60, P. ent. Soc. Washington vi.
Hastula hyerana, larval habits, CHAPMAN, p. lxx, P. ent. Soc. London 1904.
Olethreutes betulatana, food-plant, HAVERHORST, p. 97, Ent. Ber. Nederland i.
Opogona fumiceps, early stages, VAN DEVENTER, p. 83, pl. x, fig. 1, Tijdschr. Ent. xlv.
Setomorphia tineoides, early stages, VAN DEVENTER, p. 81, pl. ix, fig. 3, t. c.
Thiodia artemisiana var. *n. infimbriana*, DYAR, p. 927, P. U. S. Mus. xxvii.
Tortrix raptimacula, Ecuador, DOGNIN, p. 132, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Polychrosis viteana, distinctions, natural history, SLINGERLAND, Bull. Cornell exp. Stat. No. 223, illustrations.
Proteopteryx willingana, Assinaboia, KEARFOTT, p. 306, Canad. Ent. xxxvi; *P. columbia*, p. 112, with varr. *albidorsana*, p. 113, and *mediostriana*, p. 114, British Columbia, KEARFOTT, t. c. : **n. spp.**

TINEIDÆ, s. l.

[Cf. BUSCK (203–206), CHRÉTIEN (276), DOGNIN (398), FERNALD (497), FUCHS (572), FYLES (576), LOWER (888), MEYRICK (946), PETRY (1038–1040), REBEL (1122), REUTER (1158), SAUBER (1212), TURNER (1411), VAN DEVENTER (1428, 1429), WALSINGHAM (1469, 1470).]

Remarkable larval cases and habits, GREEN, p. 158, *Spolia Zeylan.* ii.

Annotated list of Finland *Tineidæ*, REUTER, *Acta Soc. Faun. Fenn.* xxvi, No. 1, pp. 4–66.

Notes for popular use on the classification of *Tineidæ*, ROSTAGNO, pp. 68–87, *Boll. Soc. zool. Ital.* xiii.

Achoria n. g. *A. inopina* n. sp., Sydney, MEYRICK, p. 405, *P. Linn. Soc. N. S. Wales* xxix.

Acompsia dimorpha, Pyrenees, PETRY, p. 4, *Deutsche ent. Zeitschr. Iris* xvii, n. sp.

Adela collicolella, Tangier, WALSINGHAM, p. 7, *Ent. Mag.* xl, n. sp.

Eoloscelis aulacosema, *euphædra*, p. 172, *petrosarca*, *hemicroca*, Australia, LOWER, *Tr. R. Soc. S. Austral.* xxviii, n. spp.

Allocota n. g., p. 419, *A. simulacrella* n. sp., Sydney, p. 420, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Allonomyna n. n. for *Orchemia* Fernald, BUSCK, p. 745, *P. U. S. Mus.* xxvii.

Anacamptis linella, Basses Alpes, CHRÉTIEN, p. 151, *Naturaliste* 1904 ; *A. fragariella*, Washington, BUSCK, p. 760, *P. U. S. Mus.* xxvii : n. spp.

Anaptilora n. g. *A. isocosma*, p. 390, *cremias*, p. 391, n. spp., Queensland, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Anarsia trichodeta, p. 415, *molybdota*, *leucophora*, p. 417, *epiula*, p. 418, n. spp., Australia, MEYRICK, t. c.

Apotistatus n. g. near *Symmoca*, *A. leucostictus* n. sp., Algeria, WALSINGHAM, p. 271, *Ent. Mag.* xl.

Argyresthia prenjejella, pl. v, fig. 21, p. 347, REBEL, *Ann. Hofmus. Wien* xix.

Aristotelia sinistra, p. 287, *macrothecta*, *furtiva*, p. 288, *thetica*, *tetracosma*, p. 289, *antipala*, *pamphæa*, *epimetalla*, p. 290, Australia, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix ; *A. natalella*, *harrisonella*, Brit. Columbia, BUSCK, p. 756, *P. U. S. Mus.* xxvii : n. spp.

Arotria n. g. *A. iophæa* n. sp., Queensland, MEYRICK, p. 387, *P. Linn. Soc. N. S. Wales* xxix.

Aulacomima n. g. *A. trinervis* n. sp., Sydney, MEYRICK, p. 395, t. c.

Batrachedra zonochra, p. 169, *stenosema*, *hypoleuca*, *B. ? lygropis*, Australia, p. 170, LOWER, *Tr. R. Soc. S. Austral.* xxviii, n. spp.

Borkhausenia amphixantha, Melbourne, *B. ? erythrocephala*, N. S. W., LOWER, p. 169, t. c. n. spp.

Brachodes Gn. (= *Atychia* Latr. nec Ochs.), WALSINGHAM, p. 7, *Ent. Mag.* xl.

Calicotis microgalopsis, Queensland, LOWER, p. 171, t. c. n. sp.

Cerostoma indecorella, characters, variation, WALSINGHAM, p. 319, *Ent. Mag.* xl.

Chaliniastis n. g., p. 301, *C. astrapæa* n. sp., Queensland, p. 302, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Choreutis balsamorhizella, p. 748, *piperella*, p. 749, Washington, BUSCK, *P. U. S. Mus.* xxvii, n. spp.

Clymene ægerifasciella to *Trichoptera*, BANKS, p. 116, *Ent. News Philad.* xv.

Coleophora tiliaefoliella Clem., description, KEARFOTT, p. 324, *Canad. Ent.* xxvi ; *C. limosipennella*, natural history, HOOVER, pp. 54–56, *Ent. News Philad.* xv ; *C.*, cases, habits, TURNER, pp. xxxiv–xxxvi, *P. ent. Soc. London* 1904 ; *C.*, cases, TURNER, pp. xlix, l, t. c., and t. c. pp. lx–lxiii ; *C.*, notes on, eggs etc., TURNER, pp. 32–34, *Ent. Rec.* xvi.

C. benedictella, Basses Alpes, CHRÉTIEN, p. 163, *Naturaliste* 1904 ; *C. persimilis*, Prenj, REBEL, p. 365, *Ann. Hofmus. Wien* xix ; *C. neviusiella*, China, BUSCK, p. 45, *J. N. York ent. Soc.* xii : n. spp.

- Colobodes* n. g. *C. insomnis* n. sp., Sydney, MEYRICK, p. 297, P. Linn. Soc. N. S. Wales xxix.
- Coptodisca arbutiella*, Washington, BUSCK, p. 769, P. U. S. Mus. xxvii, n. sp.
- Coptotelia nigriplaga*, Ecuador, DOGNIN, p. 134, Ann. Soc. ent. Belgique xlviii, n. sp.
- Cosmopteryx vellella*, Washington, BUSCK, p. 768, P. U. S. Mus. xxvii, n. sp.
- Craspedotis* n. g. *C. soloeca*, p. 326, *pragmatica*, *thinodes* n. spp., Australia, p. 327, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Crocantbes diula*, p. 398, *halurga*, p. 399, *glycina*, p. 400, *perigrapta*, p. 402, *zonias*, p. 403, Australia and Tasmania, MEYRICK, t. c. n. spp.
- Crasopola* n. g. for *Atasthalistis euchroa* Low., MEYRICK, p. 410, t. c.
- Cryptolechia sexmaculata*, Ecuador, DOGNIN, p. 133, Ann. Soc. ent. Belgique xlviii, n. sp.
- Cryptophasa alplitodes*, *themerodes*, Queensland, TURNER, p. 244, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Cymatomorpha* n. g., p. 411, *C. euplecta* n. sp., Australia, p. 412, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Dectobathra* n. g., p. 299, *D. choristis*, *amethystina*, p. 300, *insignis*, p. 301, n. spp., Australia, MEYRICK, t. c.
- Depressaria heracleana*, food-plant, HAVERHORST, p. 97, Ent. Ber. Nederland. i.
- D. pentheri*, Prenj, REBEL, p. 360, pl. v, fig. 26, Ann. Hofmus. Wien xix ; *D. rosaciliella*, p. 763, *canella*, p. 764, *pallidella*, *alienella*, p. 765, N. America, BUSCK, P. U. S. Mus. xxvii : n. spp.
- Deuteroptila* n. g., p. 418, *D. sphenophora* n. sp., Queensland, p. 419, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Dorata lineata* Wals. (as *Pterolonche*)=(*virgatella* Busck), DYAR, p. 178, J. N. York Ent. Soc. xii.
- Dorata* n. g. ? near *Chimabache*, *D. virgatella*, p. 123, *inornatella*, p. 124, n. spp., Arizona, BUSCK, P. ent. Soc. Washington vi.
- Doryphora palustrella*, larva, BARRETT, p. 278, Ent. Mag. xl.
- Dysmasia petrinella*, habits, CHRÉTIEN, p. 119, Bull. Soc. ent. France 1904.
- Ephelictis* n. g., p. 387, *E. megalarthra*, *neochalca*, p. 368, n. spp., Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Epibrontis* n. g. for *Gelechia hemichlana* Low., MEYRICK, p. 324, t. c.
- Epidoca albidella* Reb. to *Symmoca*, WALSINGHAM, p. 272, Ent. Mag. xl.
- Epimastis* n. g. for *Gelechia porphyroloma* Low., MEYRICK, p. 325, P. Linn. Soc. N. S. Wales xxix.
- Epiphthora megalornis*, *balonodes*, p. 261, *drosias*, *thyellias*, *lemurella*, p. 262, *niphaula*, *psychrodes*, *miarodes*, p. 263, *isonira*, *autoleuca*, p. 264, *cryolopha*, *leucomichla*, p. 265, *phantasta*, *achnias*, *spectrella*, p. 266, *coniombra*, *microtima harpastis*, p. 267, Australia and Tasmania, MEYRICK, t. c. n. spp.
- Epithectis delminiella*, Balkans, REBEL, p. 353, Ann. Hofmus. Wien xix, n. sp.
- Eremica* n. g. near *Symmoca*, *E. saharæ*, p. 270, *lithochroma* n. spp., Algeria, p. 271, WALSINGHAM, Ent. Mag. xl.
- Eriocrania chrysolepidella*, p. 42, *sangii*, *kaltenbachii*, p. 43, notes, FUCHS, Jahrb. nassau. Ver. lvii.
- E. argyrolepidella*, Bornich, id. p. 43, t. c. n. sp.
- Ethmia zelleriella*, larva, DYAR, p. 3, P. ent. Soc. Washington vi ; *E. longimaculella*, larva, DYAR, p. 178, J. N. York Ent. Soc. xii.
- E. caliginosella*, Colorado, BUSCK, p. 44, t. c. n. sp.
- Eucalantica* n. g. for *Calantica polita* Walsingh., BUSCK, p. 750, P. U. S. Mus. xxvii.
- Eumasia* n. g. for *Dysmasia parietariella*, CHRÉTIEN, p. 119, Bull. Soc. ent. France 1904.
- Gelechia pyrenaica*, Pic du Midi, PETRY, p. 3, Deutsche ent. Zeitschr. Iris

- xvii; *G. montivaga*, p. 221, *lacertella*, p. 222, *sinuatella*, p. 223, *erubescens*, p. 265, *cerostomatella*, *nigrorosea*, p. 266, *heligmatodes*, p. 267, Algeria, WALSINGHAM, Ent. Mag. xl; *G. limitanella*, p. 349, pl. v, fig. 22, *G. (Lita) lakatensis*, p. 351, fig. 24, Bosnia, REBEL, Ann. Hofmus. Wien xix; *G. nephelombra*, p. 309, *bathropis*, p. 310, *epactæa*, p. 312, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix; *G. mandella*, *monella*, p. 759, *ceanothiella*, p. 760, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Glyphidocera septentrionella*, Brit. Columbia, BUSCK, p. 762, t. c. **n. sp.**
- Gnorimoschema bucolica*, p. 317, *petrinodes*, *pyrrhauthes*, p. 318, *marina*, p. 319, *xerophylla*, p. 320, *eschatopis*, p. 321, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix; *G. washingtoniella*, p. 757, *radiatella*, *splendoriferella*, p. 758, Washington, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Gracilaria elongella* varr., BUSCK, p. 770, t. c.
- G. cramerella*, Java, SNELLEN, p. 84, early stages, VAN DEVENTER, l. c. pl. 10, fig. 2, Tijdschr. Ent. xlv; *G. eugeniella*, p. 11, pl. i, fig. 4, *barringtoniella*, p. 14, fig. 5, *diffuella*, p. 17, fig. 6, *glutella*, p. 20, fig. 7, *soyella*, p. 22, pl. ii, fig. 1, *protiella*, p. 25, fig. 2, *grisella*, p. 27, pl. ii, fig. 3, Java, VAN DEVENTER, Tijdschr. Ent. xlvii; *G. murtfeldtiella*, N. America, BUSCK, p. 771, P. U. S. Mus. xxvii : **n. spp.**
- Heliozela præustella*, pl. i, fig. 3, p. 7, *sobrinella*, p. 9, Java, VAN DEVENTER, Tijdschr. Ent. xlvii, **n. spp.**
- Hemerophila* Busck, **n. spp.**, see *Geometridæ*.
- Hemiarcha* **n. g.** type *Gelechia thermochroa*, MEYRICK, p. 331, P. Linn. Soc. N. S. Wales xxix.
- Holcocera glandulella*, metamorphosis, CHITTENDEN, p. 38, Bull. U. S. Dep. Agric. Ent. xlv.
- Hyodectis* **n. g.** *H. crenoides* **n. sp.**, Australia, MEYRICK, p. 411, P. Linn. Soc. N. S. Wales xxix.
- Idiophantis* **n. g.** *I. habrias* **n. sp.**, Brisbane, MEYRICK, p. 298, t. c.
- Incurvaria piperella*, Washington, BUSCK, p. 775, P. U. S. Mus. xxvii, **n. sp.**
- Iulota* **n. g.** near *Aristotelia*, *I. ithyxylla*, Australia, p. 283, *triglossa*, Tasmania, p. 284, **n. spp.**, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Kearfottia* **n. g.** *Choreutince*, p. 130, *K. albifasciella* **n. sp.**, N. America, p. 131, FERNALD, Canad. Ent. xxxvi.
- Leucoptera pachystimella*, Brit. Columbia, BUSCK, p. 774, P. U. S. Mus. xxvii, **n. sp.**
- Leobatus* **n. g.** near *Gelechia*, p. 220, *L. fagonie* **n. sp.**, Algeria, p. 221, WALSINGHAM, Ent. Mag. xl.
- Leptogeneia* **n. g.**, p. 412, *L. bicristata* **n. sp.**, Sydney, p. 413, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Lichenaula callispora*, Australia, TURNER, p. 245, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Limnoecia heterozona*, *isodesma*, *anisodesma*, Australia, LOWER, p. 174, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Lita nitentella*, natural history, PETRY, pp. 176–179, Stettin Ent. Zeit. lxx.
- L. oreocygniella*, Corsica, PETRY, p. 249, t. c. **n. sp.**
- Lithocolletis suaveolentis*, Corsica, PETRY, p. 252, t. c. **n. sp.**
- Litodonta hydromeli*, larva, DYAR, p. 3, P. ent. Soc. Washington vi.
- Lyonetia simpellæ*, Java, SNELLEN, p. 86, early stages, VAN DEVENTER, l. c. pl. x, fig. 3, Tijdschr. Ent. xlv; *L. saliciella*, Brit. Columbia, BUSCK, p. 773, P. U. S. Mus. xxvii : **n. spp.**
- Macrenches* **n. g.**, p. 306, *M. eurybatis* **n. sp.**, W. Australia, p. 307, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Macrotona* **n. g.**, p. 405, *M. terrigena*, p. 406, *cyamitis*, *sobria*, p. 407, **n. spp.**, Australia, MEYRICK, t. c.
- Marmara arbutiella*, Washington, BUSCK, p. 772, P. U. S. Mus. xxvii, **n. sp.**

- Megacraspedus platyleuca*, p. 274, *astempbella*, *centrosema*, p. 275, *oxyphanes*, *chalcoscia*, *melitopis*, p. 276, *euxena*, *hoplitis*, *inficeta*, p. 277, *pityritis*, p. 278, *sclerotricha*, p. 279, *aphileta*, *isotis*, p. 280, *coniodes*, p. 281, *ischnota*, *popularis*, p. 282, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Metzneria incognita*, Algeria, WALSINGHAM, p. 220, Ent. Mag. xl, **n. sp.**
- Nemotois constantinella*=(*demaioni* Rgt.), WALSINGHAM, p. 217, Ent. Mag. xl.
- Nepticula bleonella*, Basses Alpes, CHRÉTIEN, p. 164, Naturaliste 1904; *N. thuringiaca*, Germany, PETRY, p. 179, Stettin Ent. Zeit. lxxv; *N. tingitella*, Tangier, WALSINGHAM, p. 8, Ent. Mag. xl: **n. spp.**
- Nothris sulcella*, Prenj, REBEL, p. 356, pl. x, fig. 25, Ann. Hofmus. Wien xix; *N. chloristis*, p. 421, *centrothetis*, p. 422, *crocina*, p. 423, *mylicotis*, p. 426, *tephrastis*, *dentata*, p. 427, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Ocystola heliotricha*, Tasmania, LOWER, p. 168, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Onebala* to be compared with *Trichotaphe*, *O. lamprostoma* Z.=(*zulu* Wals.), WALSINGHAM, p. 267, Ent. Mag. xl.
- Ornix sauberiella* (Sorh.), Hamburg, SAUBER, p. 46, Verh. Ver. Hamburg. Unterh. xii, **n. sp.**
- Orthoptila* **n. g.** for *Ecophora abruptella* Walk., MEYRICK, p. 392, P. Linn. Soc. N. S. Wales xxix.
- Paltodora stalactis*, p. 271, *sciopola*, *actias*, p. 272, Australia and Tasmania, MEYRICK, t. c. **n. spp.**
- Pancoenia* **n. g.** *P. periphora*, p. 389, *pelota*, p. 390, **n. spp.**, Sydney, MEYRICK, t. c.
- Paraclemensia* **n. n.** for *Brackenridgia* Busck 1903, BUSCK, p. 177, J. N. York Ent. Soc. xii.
- Phleograptis* **n. g.**, p. 393, *P. macrynta*, *brachynta*, *zopherota*, p. 394, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Phleopola sciaspila*, Queensland, LOWER, p. 168, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Phyllocnistis minimella*, p. 34, pl. ii, fig. 6, *humiliella*, p. 38, fig. 7, *exiguella*, p. 40, fig. 8, Java, VAN DEVENTER, Tijdschr. Ent. xlvii; *P. minutella*, Java, SNELLEN, p. 87, early stages, VAN DEVENTER, l. c. pl. x, fig. 4, op. cit. xlv: **n. spp.**
- Plutella notabilis*, Washington, p. 752, *poulella*, Brit. Columbia, p. 753, BUSCK, P. U. S. Mus. xxvii, **n. spp.**
- Proactica* **n. g.** near *Anaphaula*, p. 268, *P. halimilignella* **n. sp.**, Algeria, p. 269, WALSINGHAM, Ent. Mag. xl.
- Procometis aplegiopa*, Queensland, TURNER, p. 245, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Prodosiarcha* **n. g.** *P. loxodesma* **n. sp.**, Australia, MEYRICK, p. 330, P. Linn. Soc. N. S. Wales xxix.
- Protolechia* **n. g.**, p. 332 for 85 species Australian *Gelechiidæ*, most of them new, viz., *tetraploa*, *telopis*, p. 338, *exarista*, p. 339, *acroleuca*, *camionpis*, p. 340, *temenitis*, *voluta*, p. 341, *pacifica*, p. 342, *trachyphanes*, *prisca*, p. 343, *diplovesa*, *cryptisbatis*, p. 344, *flexilis*, *frugalis*, p. 345, *microdora*, *invalida*, *cladara*, p. 346, *sciodes*, *trichosema*, p. 347, *aclera*, *autopis*, p. 348, *elpistis*, p. 349, *argocentra*, *liota*, p. 350, *hypoleuca*, *cosmotis*, p. 351, *psephias*, *actinota*, p. 352, *nyctias*, *iochlema*, p. 353, *xestolitha*, *nephelota*, p. 354, *anthracina*, *phleodes*, *thyridota*, p. 355, *sarisias*, p. 356, *englypta*, p. 357, *obeliscota*, p. 358, *sisyrea*, *chenias*, p. 359, *mechanistis*, p. 360, *xuthias*, p. 361, *ceramica*, p. 362, *hormodes*, *plinthactis*, p. 363, *stratifera*, *catarrhacta*, p. 366, *tabulata*, *pelogramma*, p. 367, *amblopis*, p. 368, *æolopis*, *hylas*, p. 369, *compsochroa*, p. 370, *odorifera*, *micropa*, p. 371, *diplanetis*, *cephalota*, p. 373, *scytina*, *ananeura*, p. 374, *xanthocephala*, p. 376, *trichalina*, *arganthes*, p. 377,

- selenia*, p. 378, *gorgonias*, *chiradia*, p. 380, *thyrsoptera*, p. 381, *phasianis*, p. 382, *loemias*, p. 383, *megalommata*, *banauosodes*, p. 384, *crotalodes*, *molyntis*, p. 385, *aspetodes*, p. 386, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix, n. spp.
- Pyroderces albinaculella*, p. 30, pl. ii, fig. 4, *albilineella*, p. 33, fig. 5, Java, VAN DEVENTER, Tijdschr. Ent. xlyi; *P. argyrozona*, Queensland, LOWER, p. 173, Tr. R. Soc. S. Austral. xxviii : n. spp.
- Rhinostia pallidipulchra*, Algeria, WALSINGHAM, p. 269, Ent. Mag. xl, n. sp.
- Sarisophora* n. g., p. 403, *S. leptoglypta*, *chlenota* n. spp., Australia, p. 404, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Sarotorna* n. g., p. 322, *S. eridora* n. sp., Australia, p. 323, MEYRICK, t. c.
- Scardia burkerella*, Washington, BUSCK, p. 777, P. U. S. Mus. xxvii, n. sp.
- Scythris magnatella*, Brit. Columbia, BUSCK, p. 768, t. c. n. sp.
- Smenodoca* n. g., p. 302, *S. erebenna* n. sp., Australia, p. 303, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Spatularia* n. g. near *Tinea*, *S. fuligineella* n. sp., Java, with early stages, VAN DEVENTER, p. 1, pl. i, fig. 1, Tijdschr. Ent. xlvii.
- Sphaleractis* n. g. *S. parasticta*, p. 328, *eurysema*, p. 329, n. spp., Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Stagmatophora fiordalisa*, Corsica, PETRY, p. 250, Stettin Ent. Zeit. lxy, n. sp.
- Stathmopoda trichopoda*, *holobapta*, Australia, LOWER, p. 171, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Stegasta* n. g., p. 313, *S. variana*, *allactis*, p. 314, n. spp., Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Symbolistis* n. g., p. 413, *S. orophota*, *argyromitra* n. spp., Australia, p. 414, MEYRICK, t. c.
- Symmoca sericiella*, Algeria, WALSINGHAM, p. 273, Ent. Mag. xl, n. sp.
- Styloceros* n. g. *S. trigonia*, p. 408, *lychnocentra*, *cyclonitis*, p. 409, n. spp., Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Syntomactis decalopha*, *argoscia*, p. 175, *gnophodes*, *perinephes*, *polychroa*, p. 176, *melamydra*, p. 177, Australia, LOWER, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Thalamarchis* n. g. for *Cryptolechia alveola* Feld., MEYRICK, p. 436, P. Linn. Soc. N. S. Wales xxix.
- Thiotricha* n. g., p. 292, type *thorybodes* Meyr., with *T. chrysopa*, *oxythees*, p. 293, *margarodes*, *leucothona*, p. 294, *paraconta*, *arthrodes*, p. 295, *bullata*, *niphastis*, *anticentra*, p. 296, *parthenica*, p. 297, n. spp., Australia and Tasmania, MEYRICK, t. c.
- Tinea leucocapitella*, Washington, BUSCK, p. 776, P. U. S. Mus. xxvii, n. sp.
- Trachydora leucobathra*, p. 177, *polyzona*, *zophoepla*, p. 178, *molybdimera*, *anthrascopa*, *centromela*, p. 179, *microleuca*, *argoneura*, p. 180, Australia, LOWER, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Trichotaphe levisella*, Quebec, FYLES, p. 211, Canad. Ent. xxxvi; *T. simpli-ciella*, p. 761, *leuconotella*, p. 762, Washington, BUSCK, P. U. S. Mus. xxvii : n. spp.
- Tritadelpha* n. g. *T. microptila* n. sp., Brisbane, p. 323, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Xylorycta cirrhodes*, Queensland, TURNER, p. 244, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Xystophora modicella*, Java, with early stage, VAN DEVENTER, p. 4, pl. i, fig. 2, Tijdschr. Ent. xlvii, n. sp.
- Yponomeuta*; synonymy, GUIGNON, pp. 219, 220, Feuille Natural. xxxiv : LOISELLE, t. c. p. 235.
- Ypsolophus ammodanthus*, *zygophorus*, p. 430, *peristylis*, p. 431, *achlyodes*, *iodorus*, p. 432, *plasticus*, p. 433, *capnites*, p. 435, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix, n. spp.
- Zelleria gracilariella*, p. 753, *ribesella*, p. 754, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii, n. spp.

(D.) DIPTERA.

- Brief history of North American *Dipterology*, COQUILLETT (312).
 The mouth-parts of *Diptera*, WIMMER, Rozp. Ceske Ak. Prazie ii, xiii, No. 1, pp. 4-10, pl. 2.
 WESCHÉ has an important paper on the comparative anatomy of the trophi, and their bearing on classification, J. R. Micr. Soc. 1904, pp. 28-47, pls. iii-viii.
 The palpi, WESCHÉ, Tr. Linn. Soc. London 1904, pl. 4, pp. 219-230, pls. viii-x.
Diptera of Alaska, COQUILLETT (320).
 Brief note on *Diptera* of Rome, TUCCIMEI, pp. 218-222, Boll. Soc. zool. Ital. xi-xiii.
 Study of the reduced head, *Chironomus*, *Phalacroceras*, *Microdon*, *Musca*, HOLMGREN, pp. 343-355, cuts, Zool. Anz. xxvii.
 Sense-organs in *Diptera*, WESCHÉ, J. Quekett Club (2), ix, pp. 91-104, pls. vi, vii.
 List of types of *Diptera* in the American Museum Natural History, BEUTENMÜLLER (121).

CECIDOMYIIDÆ.

- [Cf. BEZZI (128), COCKERELL (287), COLLIN (298), KIEFFER (792), MARCHAL (906, 910, 911), MEUNIER (942), SLINGERLAND & JOHNSON (1309), TROTTER (1396), WEBSTER (1499).]
 Cecid. gall on *Arthrocnemum*, Marocco, TROTTER, p. 14, cut, Marcellia iii.
Cecidomyiidae in amber, n. spp. cf. Palæontomology, p. 124.
 Catalogue of British *Cecidomyiidae*, COLLIN, pp. 93-99, Ent. Mag. xl.
Cecidomyia destructor, history of its parasite *Polygnotus* (*Platygaster*), MARCHAL, Arch. Zool. exp. xxxii, pp. 300 etc.; *C. gleditchiæ*, galls, BRITTON, p. 212, pl. ii b, Rep. Connecticut exp. Stat. 1904; *C. nigra*, and others in pears, FERRAUT, pp. 298-303, Allg. Zeitschr. Ent. ix.
C. perocculta, Colorado, COCKERELL, p. 156, Canad. Ent. xxxvi; *C. ? johnsoni*, N. America, SLINGERLAND, p. 72, Bull. Cornell Exp. Stat. No. 224 : n. spp.
Clinodiplosis dahliae, Vallombrosa, KIEFFER, p. 92, Marcellia iii, n. sp.
Diplosis resinicola, parasites, ECKEL, p. 325, Biol. Bull. vi.
D. coloradella, Colorado, COCKERELL, p. 155, Canad. Ent. xxxvi, n. sp.
Neocerata rhodophaga (= *Cecid. rosarum*) metamorphoses, WEBSTER, pp. 15-25, Bull. Illinois Lab. vii.
Perrisia turionum, Italy on *Asparagus*, TROTTER, p. 6, Marcellia iii; *P. vallisumbrosæ*, Italy, KIEFFER, p. 91, Marcellia iii : n. spp.
Rhabdophaga porterae, New Mexico, COCKERELL, p. 155, Canad. Ent. xxxvi, n. sp.
Schizomyia gennadii, Cyprus, MARCHAL, p. 272, Bull. Soc. ent. France 1904, n. sp.; *S. gennadii*, natural history, MARCHAL, pp. 561-566, t. c.

MYCETOPHILIDÆ.

- [Cf. CHAPMAN (260), COQUILLETT (313, 315), MEUNIER (942).]
Mycetophilidae and *Sciariidae* in amber, relations of divisions of *Mycetophilidae*, MEUNIER (942) and Palæontomology, p. 124.

- Mycetophilid* cocoons, GREEN, p. 158, *Spolia Zeylan.* ii.
Acnemia varipennis, California, COQUILLETT, p. 169, P. ent. Soc. Washington vi, n. sp.
Ceroplatys sesiooides, tipuloides, in Finland, POPPIUS, pp. 144-146, Medd. Soc. Faun. Fenn. 1902/03.
Celosia pygophora, California, COQUILLETT, p. 170, P. ent. Soc. Washington vi, n. sp.
Eugnoriste brevirostris, Colorado, COQUILLETT, p. 169, t. c. n. sp.
Lasiosoma hirta, structure of eggs and pupa, CHAPMAN, pp. 103-107, Ent. Mag. xl.
Phronia tenebrosa, California, COQUILLETT, p. 170, P. ent. Soc. Washington vi, n. sp.
Platyura pullata, California, COQUILLETT, p. 171, t. c. n. sp.
Sciara trifusciata, Nicaragua, COQUILLETT, p. 90, t. c. n. sp.

CHIRONOMIDÆ.

- [Of. CHEVREL (262), COQUILLETT (313, 315, 317, 319), HOLMGREN (699), MEUNIER (942).]
Ceratopogon medius, New Jersey, COQUILLETT, p. 166, P. ent. Soc. Washington vi; *C. terminalis*, Nicaragua, COQUILLETT, p. 90, t. c.; *C. guttatus*, Brazil, COQUILLETT, p. 35, J. N. York Ent. Soc. xii: n. spp.
Chironomus, anatomy of larva, head, HOLMGREN (699); *C. plumosus*, great dancing swarm, SCHUSTER, p. 344, Zool. Garten xlv.
Hydrobenus lugubris, larva and habits, GIARD, pp. 164, 165, Bull. Soc. ent. France 1904.
Metriocnemus knabi, Massachusetts, COQUILLETT, p. 11, Canad. Ent. xxxvi, n. sp.
Tanypus dyari, pupa and its habits, GIRAULT, p. 81, Psyche xi.
Thalassomyia; *Scopelodromus* is the same genus, but *T. frauenfeldi* and *S. isemerinus* are different species, CHEVREL, pp. xxix-xxxv, Arch. zool. exp. Notes 1904.

CULICIDÆ.

- [Of. BALFOUR (77A), CHRISTOPHERS (277), COGGI & CECCHERELLI (296), COLLEDGE (297), COQUILLETT (315, 316, 317), DUTTON (418), DYAR (421, 423, 425, 426, 429), DYAR & KNAB (442), DYÉ (443, 444), FELT (495), FELT & YOUNG (495A), GILES (601-604), GOELDI (615), GROSSBECK (637, 638), JAMES (758, 759), JAMES & LISTON (760), KERTÉSZ (790), KNAB (821, 822), LEACH (865), LEBREDO (867), LEON (874, 875), LUDLOW (891, 892), MCCrackEN (931), MEUNIER (943), PAZOS (1012), SCHAUDINN (1224), SCHNEIDER (1233), SMITH (1315-1317, 1319), STEFANI-PEREZ (1339), THEOBALD (1371, 1373, 1374, 1376), WAHLGREN (1463), WIMMER (1534).]

The genera criticised, GILES, pp. 365 etc., J. trop. Medicine vii.

Mosquito, anatomy, LEBREDO (867).

The structure of proboscis in *Anophelides*, LEON, Zool. Anz. xxvii, pp. 730-732, cut.

The alimentary system and mode of ingestion of *Culex pipiens*, SCHAUDINN (1224).

Culicidæ and their parasites, general account, DYÉ, Arch. parasit. ix, pp. 5-77.

Notes on habits and distribution of *Culicidæ* in Italy, COGGI & CECCHERELLI, pp. 55-57, Bull. Soc. ent. Ital. xxxvi.

- Hungarian *Culicidæ*, treatise on in Hungarian, KERTÉSZ, Allatt. Kozl. Magyar Tars. iii, pp. 1-75.
- Culicidæ* of Egypt, Sudan and Abyssinia, THEOBALD, pp. 62-83, pls. i-vi, 1st Rep. Wellcome Lab.
- Culicidæ* of the Nile region, BALFOUR (77A).
- Culicidæ* of Tchad and of Chari, LAVERAN, pp. 1069, 1070, Soc. Biol. lvi.
- Culicidæ* in Guinea, LAVERAN, p. 555, C.R. Soc. Biol. lvi.
- General account of mosquitoes, and monograph of *Anopheles* of India and their larvæ, JAMES & LISTON, *Anopheles* of India, 30 pls.
- Culicidæ* of Upper Tonkin, LAVERAN, pp. 1070, 1071, C.R. Soc. Biol. lvi.
- Monograph of *Culicidæ* of New York, with natural history observations, larvæ, and descriptions of spp. n. and genn. n., FELT, Bull. N. York Mus. No. 79, pp. 241-400, 57 pls. and many cuts.
- Notes on *Culicidæ* and larvæ in British Columbia, DYAR, pp. 37-41, P. ent. Soc. Washington vi.
- Rearing *Culicidæ* larvæ and importance of larvæ for distinction of species, FELT & YOUNG, p. 312, Science xx.
- Larvæ, epistomal appendages of, KNAB, pp. 175-177, pl. x, J. N. York Ent. Soc. xii.
- Presumed parthenogenesis of *Culex*, KELLOGG, p. 59, Allg. Zeitschr. Ent. ix.
- Experiments as to feeding, oviposition, etc. with reference to medical point of view, *Stegomyia fasciata* and *Culex fatigans*, GOELDI (615).
- Mosquito-control in New Jersey, with account, and descriptions, of the species occurring there, their habits and life-histories, SMITH (1315).
- Mosquitoes and mosquito control, Connecticut, BRITTON & VIERECK, pp. 253-310, pls. x-xvii, Rep. Connecticut exp. Stat. 1904.
- Protection against *Anopheles* among the ancients, MANZI, pp. 88-109, Arch. parasit. viii.
- Anopheles*, classification discussed, the Indian forms described and figured, their larvæ, JAMES & LISTON, *Anopheles* of India; *A. costalis* var. n. *melas*, p. ii, *A. funestus* varr. n. *umbrosus* and *subumbrosus*, p. iv, THEOBALD, Thompson Yates Lab. Rep. v, Mem. x App.; *A.*, at Siena, COGGI & CECCHERELLI, pp. 53, 54, Bull. Soc. ent. Ital. xxxvi; *A.*, in Sicily, similarity of larva to that of *Dixa*, STEFANI-PEREZ, pp. 9, etc., Natural. Sicil. xvii; *A.* in Madagascar, DYER, C.R. Soc. Biol. lvi, pp. 544, 545; *A.* in India, habits, larvæ, JAMES, Sci. Mem. India n. s. No. 2 (1902), pp. 27-59, unnamed spp. allied to *A. jamesii*, pp. 40-43, t. c.; *A.* in Victoria, LEACH, Victorian Natural. xxi, pp. 9-12; *A. maculipennis* and malaria, LAVERAN, pp. 325, 326, C.R. Soc. Biol. lvi; *A. vincenti*, characters, LAVERAN, p. 1072, t. c.; *A. barberti*, predaceous larva, DYAR, p. 243, J. N. York Ent. Soc. xii; *A. claviger*, natural history, seasons, SCHNEIDER, pp. 41-45, K.B. Ver. Riga xlvii; *A. crucians*, larva, SMITH, p. 150, pl. xii, Ent. News Philad. xv; *A.*, biting apparatus of, LEON, pp. 97, 98, Bull. Soc. Jassy xviii.
- A. wellcomei*, Nile, THEOBALD, p. 64, pl. iii, fig. 4, and pl. v, fig. 5, 1st Rep. Wellcome Lab.; *A. culiciformis*, Bombay, JAMES & LISTON, p. 122, larva plate xv, *Anopheles* of India; *A. fluviatilis*, p. 31, *jeyporiensis*, p. 32, *immaculata*, p. 35, *stephensii*, p. 45, *pulcherrimus*, p. 48, India, JAMES [in 1902], Sci. Mem. India (n. s.), No. 2; *A. franciscanus*, California, MCCracken, p. 12, pl. ii, Ent. News Philad. xv : n. spp.
- Catagelomyia* n. g. near *Stegomyia*, *senegalensis* n. sp., Africa, THEOBALD, pp. i, Thompson Yates Lab. Rep. v, Mem. xi App.
- Cellia pharoensis*, p. 70, pl. v, fig. 1, THEOBALD, 1st Rep. Wellcome Lab.
- Conchyliaastes varipes*, Mexico, COQUILLET, p. 10, Canad. Ent. xxxvi, n. sp.

- Corethra*, mode of colouring living larva, KOLMER (832); *C. rufa* Zett. to *Mochlonyx*, *C. culiciformis* (Th. nec De Geer), synonymy, WAHLGREN, pp. 14, 15, Arkiv Zool. ii, No. 7.
- C. ceratopogones*, Gambia, THEOBALD, p. x, Thompson Yates Lab. Rep. v, Mem. x App.; *C. indica*, Moradabad, GILES, p. 49, J. trop. Medicine vii; *C. karnerensis*, p. 347, *lintneri*, p. 353, New York, FELT, Bull. N. York Mus. No. 79 : n. spp.
- Culex annulioris* var. n. *gambiensis*, THEOBALD, p. v, Thompson Yates Lab. Rep. v, Mem. x App.; *C. luteolateralis* varr. n. *pallida* and *albothorax*, THEOBALD, p. ii, op. cit. Mem. xi App.; *C. pëus* n. n. for *affinis* Ad., SPEISER, p. 148, Ins. Börse 1904; *C. fuscus* Wied., Asia minor, characters, GILES, p. 384, J. trop. Medicine vii; *C. fuscus*, characters, WAHLGREN, p. 14, Arkiv Zool. ii, No. 7; *C. mimeticus*, habitat, characters, COGGI, pp. 49-52, Bull. Soc. ent. Ital. xxxvi; *C. trichurus* = (*cinereoborealis* Felt), DYAR, p. 244, J. N. York Ent. Soc. xii; *C. punctor* = (*Culex abserratus* Felt & Young, *C. fitchii* and *cantans* queried, DYAR, pp. 245, 246, t. c.; *C. cantans*, life-history, DYAR, pp. 36-38, pl. i, t. c.; *C. maculis alternans*, life-history, anatomical details, COLLEDGE, P. Soc. Queensland xviii, pp. 67-80, pls. iii-vii; *C. varipalpus*, life-history, DYAR, pp. 90-92, pl. iii, J. N. York Ent. Soc. xii; *C. punctor* and *trichurus*, early stages, pl. ix, pp. 169, 170, notes on various N. American larvæ and their enormous numbers, pp. 172-174, DYAR, J. N. York Ent. Soc. xii; *C. cantans restuans*, *impiger*, larval variation, DYAR & KNAB, pp. 143, 144, P. ent. Soc. Washington vi; *C. dupreei*, larva and pupa, SMITH, p. 49, pl. vii, Ent. News Philad. xv; *C. perturbans*, eggs and young larva, DYAR & CURRIE, pp. 218, 219, cuts, P. ent. Soc. Washington vi; *C. trivittatus*, pl. ix, p. 145, *discolor*, pl. x, p. 147, *aurifer*, pl. xi, p. 148, larvæ, SMITH, Ent. News Philad. xv; *C. territans*, oviposition and eggs, KNAB, pp. 246-248, J. N. York Ent. Soc. xii; *C.*, anatomy, PAZOS Y CABALLERO (1012); *C. pipiens*, movements in swarm, W. SCHUSTER, p. 349, Zool. Garten xlv; *C.* parasitised by a worm, SMITH, pp. 657, 658, Rep. New Jersey exp. Stat. 1903.
- C. pallidocephala*, Nile, p. 73, *dentatus*, Abyssinia, p. 74, pl. vi, fig. 3, THEOBALD, 1st Rep. Wellcome Lab.; *C. anarmostus*, p. vi, *thalassius*, p. vii, *euclostus*, p. viii, Gambia, THEOBALD, Thompson Yates Lab. Rep. v, Mem. x App.; *C. teniorhynchoides*, Angola, GILES, p. 368, J. trop. Medicine vii; *C. nivitarsus*, *pullatus*, N. America, COQUILLET, p. 168, P. ent. Soc. Washington vi; *C. dupreei*, N. America, COQUILLET, p. 10, Canad. Ent. xxxvi; *C. cinereoborealis*, *lazarensis*, *abserratus*, *fitchii*, United States, FELT & YOUNG, p. 312, Science xx; *C. æstivalis*, N. America, DYAR, p. 245, J. N. York Ent. Soc. xii; *C. pretans*, p. 332, *inconspicuus*, p. 333, New Jersey, GROSSBECK, Ent. News Philad. xv; *C. salinarius*, New Jersey, COQUILLET, p. 73, Ent. News Philad. xv; *C. siphonalis*, New Jersey, GROSSBECK, p. 332, Canad. Ent. xxxvi; *C. onondagensis*, p. 305, *absobrinus*, p. 318, *magnipennis*, p. 322, *abfitchii*, p. 381, New York, FELT, Bull. N. York Mus. No. 79 : n. spp.
- Culicada* n. g. for numerous *Culex*, FELT, p. 391b, t. c.
- Culicella* n. g. type *dyari* Coq., FELT, p. 391c, t. c.
- Culicelsa* n. g. type *teniorhynchus* Wied., FELT, p. 391b, t. c.
- Culiseta* n. g. type *absobrinus* Felt, FELT, p. 391c, t. c.
- Danielsia* n. g. *Culicina*, THEOBALD, p. 78, *D. alboteniata* n. sp., Kuala Lumpur, LEICESTER, p. 111; Entomologist 1904.
- Desvoidia fusca* var. n. *joloensis*, LUDLOW, p. 236, Canad. Ent. xxxvi.
- Ecculex* n. g. type *sylvestris* Theob., FELT, p. 391c, Bull. N. York Mus. No. 79.
- Etorleptomyia* n. g. *mediolineata* n. sp., Nile, THEOBALD, p. 71, 1st Rep. Wellcome Lab.

- Finlayia*, modified, to include *Orthopomyia*, GILES, p. 366, J. trop. Medicine vii.
- F. albipes*, hab. ?, *flavipennis*, p. 366, *melanoptera*, p. 367, Philippines, GILES, t. c. n. spp.
- Grabhamia jamaicensis* in Missouri, larva, pupa, HERRICK, pp. 81-84, pl. viii, Ent. News Philad. xv.
- G. deniedmannii*, Philippines, LUDLOW, p. 234, Canad. Ent. xxxvi, n. sp.
- Hodgesia* sp., Philippines, p. 368, cut, GILES, J. trop. Medicine vii.
- Howardina himalayana*, Naini Thal, GILES, p. 384, t. c. n. sp.
- Hulecoeteomyia* n. g. *Culicina*, THEOBALD, *H. trilineata* n. sp., Kuala Lumpur, LEICESTER, p. 165, Entomologist 1904.
- Lasiocnops* n. g. near *Culex*, p. viii, *poecilipes* n. sp., West Africa, p. ix, THEOBALD, Thompson Yates Lab. Rep. v, Mem. x App.
- Leicesteria* n. g. near *Eretmapodites*, THEOBALD, p. 211, *L. longipalpis* n. sp., Kuala Lumpur, LEICESTER, p. 211, Entomologist 1904.
- Lophoscelomyia* n. g. *Anophelina*, THEOBALD, p. 12, *L. asiatica* n. sp., Kuala Lumpur, LEICESTER, p. 13, Entomologist 1904.
- Mansonina uniformis*, pl. vi, fig. 5, p. 76, THEOBALD, 1st Rep. Wellcome Lab.
- Megarhinus rutilus*, *portoricensis*, larvæ, DYAR, p. 20, P. ent. Soc. Washington vi.
- M. lewaldii*, Philippines, LUDLOW, p. 233, Canad. Ent. xxxvi, n. sp.
- Mimomyia uniformis*, Nile, THEOBALD, p. 80, 1st Rep. Wellcome Lab. ; *M. chamberlaini*, Philippines, LUDLOW, p. 297, Canad. Ent. xxxvi : n. spp.
- Mochlonyx velutinus*, metamorphosis, WIMMER, Rozp. Ceske Ak. Praze ii, xiii, No. 1, pl. 1.
- Myzomyia rossii* var., GILES, p. 1, J. trop. Medicine vii.
- M. nili*, Nile, THEOBALD, p. 66, pl. v, fig. 3, 1st Rep. Wellcome Lab. ; *M. thortonii*, Philippines, LUDLOW, p. 69, Canad. Ent. xxxvi : n. spp.
- Myzorhynchus sinensis*?, larva, GILES, p. 51, J. trop. Medicine vii ; *M. pseudobarbirostris*, correction, LUDLOW, p. 72, Canad. Ent. xxxvi.
- Nyssorhynchus jamesii* and *fuliginosus*, queried as one species, also *N. theobaldi* and *maculipennis*, GILES, p. 22, J. trop. Medicine vii.
- Orthopodomyia* n. g. near *Finlaya*, THEOBALD, p. 236, *O. albipes* n. sp., Kuala Lumpur, LEICESTER, p. 237 ; Entomologist 1904.
- Protoculex* n. g. type *serratus* Theob., FELT, p. 391d, Bull. N. York Mus. No. 79.
- Psorophora ciliata*, larval habits, DYAR, p. 244, J. N. York Ent. Soc. xii.
- Runchomyia philippinensis*, Philippines, GILES, p. 368, J. trop. Medicine vii, n. sp.
- Sayomyia rotundifolia*, p. 366, *hudsoni*, p. 371, New York, FELT, Bull. N. York Mus. No. 79, n. spp.
- Scutomyia* n. g. *Culicina*, *S. albolineata* n. sp., Kuala Lumpur, THEOBALD, p. 77, Entomologist 1904.
- Stegomyia scutellaris* var. *samarensis*, LUDLOW, p. 71, Canad. Ent. xxxvi.
- S. albocephala*, Gambia, THEOBALD, p. iv, Thompson Yates Lab. Rep. v, Mem. x App. ; *S. desmotes*, *leucomeres*, *striocurra*, Philippines, GILES, p. 367, J. trop. Medicine vii : n. spp.
- Tæniorhynchus*, revised, species tabulated, GILES, pp. 381-383, J. trop. Medicine vii ; *T.* var. n. *maculipes*, pl. vi, fig. 4, p. 79, THEOBALD, 1st Rep. Wellcome Lab.
- T. cristatus*, Nile, THEOBALD, p. 78, t. c. ; *T. whitmorei*, Philippines, GILES, p. 367, J. trop. Medicine vii ; *T. nigricans*, Panama, p. 166, *signipennis*, Mexico, p. 167, COQUILLET, P. ent. Soc. Washington vi ; *T. niger*, *antiquæ*, Antigua, GILES, p. 384, J. trop. Medicine vii : n. spp.
- Theobaldia spathipalpis*, pl. vi, fig. 1, p. 73, THEOBALD, 1st Rep. Wellcome Lab.

- Toxorhynchites leicesteri*, THEOBALD, p. 36, *metallicus*, LEICESTER, p. 37, Malay States, Entomologist 1904, n. spp.
Uranotenidia balfouri, Nile, pl. vi, fig. 6, p. 82, THEOBALD, 1st Rep. Wellcome Lab.; *U. nitidoventer*, Philippines, GILES, p. 368, J. trop. Medicine vii : n. spp.

PSYCHODIDÆ.

[Cf. EATON (445), WAHLGREN (1463).]

- Clytoecerus* n. g. for part of *Pericoma*, EATON, p. 59, Ent. Mag. xl.
Logima n. g. Type *Psychoda erminea* Eat., EATON, p. 58, t. c.
Pericoma albomaculata, Småland, WAHLGREN, p. 16, Arkiv Zool. ii, No. 7, n. sp.
Philosepedon n. g. for *P. humeralis* Meig., EATON, p. 57, Ent. Mag. xl.
Phlebotomus and allies, characters, EATON, pp. 55, 56, t. c.
Telmatoscopus n. g. for part of *Pericoma*, EATON, p. 58, t. c.
Threticus n. g. *T. gemina*, England, *compar*, Britain, Algeria, Madeira, n. spp., EATON, p. 57, t. c.
Xenapates n. g. for part of *Pericoma*, EATON, l. c.

TIPULIDÆ and RHYPHIDÆ.

[Cf. DE MEIJERE (934), SNODGRASS (1323), WAHLGREN (1463).]

- Revision of Zetterstedt's types of Scandinavian *Tipulidæ*, WAHLGREN, pp. 1-13, Arkiv Zool. ii, No. 7.
 SNODGRASS describes figures and compares the male genitalia in a large number of N. American *Tipulidæ*, Tr. Amer. ent. Soc. xxx, pp. 179-236, pls. viii-xviii.
Otenophora ornata and *flaveolata*, habits, GIARD, p. 87, Bull. Soc. ent. France 1904.
Eriocera nigripennis, Java, MEIJERE, p. 92, Bijdr. Dierk. xviii, n. sp.
Dicranomyia modesta, egg-masses, GIARD, p. 107, Feuille Natural. xxxiv.
D. aperta, Scandinavia, WAHLGREN, p. 8, Arkiv Zool. ii, No. 7; *D. kobusi*, Java, MEIJERE, p. 91, pl. viii, figg. 5, 6, Bijdr. Dierk. xviii : n. spp.
Pachyrrhina dorsalis, p. 89, *fallax*, *scurroides*, Java, *dimidiata*, New Guinea, p. 90, pl. viii, fig. 4, MEIJERE, t. c. n. spp.
Pselliophora insignis, *nigrithorax*, p. 87, *stigmatica*, p. 88, pl. viii, fig. 1, Java, MEIJERE, t. c. n. spp.
Rhipidia pulchra, Java, MEIJERE, p. 92, pl. viii, fig. 7, t. c. n. sp.
Rhyphus minor Zett., not valid, WAHLGREN, p. 17, Arkiv Zool. ii, No. 7.
Tipula tibetana, Ta-t sien lu, MEIJERE, p. 89, t. c. n. sp.

SIMULIIDÆ.

- Simulium*, criticism of Zetterstedt's species, WAHLGREN, pp. 17-19, Arkiv Zool. ii, No. 7; *S. tephrodes* n. n. for *cinereum* Bell., SPEISER, p. 148, Ins. Börse 1904.
S. notatum, Arizona, ADAMS, p. 434, Kansas Univ. Sci. Bull. ii, n. sp.

BIBIONIDÆ.

[Cf. COQUILLETT (313, 315), DE MEIJERE (934).]

- Bibio obscuripennis*, Darjiling, MEIJERE, p. 87, Bijdr. Dierk. xviii, n. sp.
Bibiodes n. g. *B. halteralis* n. sp., California, COQUILLETT, p. 171, P. ent. Soc. Washington vi.
Dilophus fumosus, *rhynchops*, Nicaragua, COQUILLETT, p. 91, t. c. n. spp.
Plecia lugubris, Ta-t sien lu, MEIJERE, p. 86, Bijdr. Dierk. xviii, n. sp.

STRATIOMYIIDÆ and SCENOPINIDÆ.

[Cf. ADAMS (8), COQUILLETT (318), HINE (688), DE MEIJERE (934), MELANDER (936).]

- Stratiomyidæ*, tables of N. American, MELANDER, Canad. Ent. xxxvi, pp. 14-24.
Cyphomyia schæfferi, S. Texas, COQUILLETT, p. 32, J. N. York Ent. Soc. xii, n. sp.
Eudmeta brunnea, Darjiling, MEIJERE, p. 94, pl. viii, fig. 19, Bijdr. Dierk. xviii, n. sp.
Euparyphus obliquus, British Columbia, HINE, p. 87, Canad. Ent. xxxvi, n. sp.
Hermetia fenestrata, Palembang, pl. viii, fig. 9, *læta*, Bengal, p. 93, MEIJERE, Bijdr. Dierk. xviii, n. spp.
Macrosargus texanus, N. America, MELANDER, p. 19, Canad. Ent. xxxvi, n. sp.
Nemotelus abdominalis, *bellulus*, *kansensis*, *trinotatus*, characters, MELANDER, pp. 33, 34, Psyche xi.
Ptecticus tricolor, Java, MEIJERE, p. 95, pl. viii, fig. 11, Bijdr. Dierk. xviii, n. sp.
Rosapha bimaculata, Java, MEIJERE, p. 96, pl. viii, figg. 13, 14, t. c. n. sp.
Scenopinus mirabilis electa, Arizona, ADAMS, p. 445, Kansas Univ. Sci. Bull. ii, n. spp.

TABANIDÆ.

[Cf. ADAMS (8), BRUMPT (136), HINE (689, 691), JOHNSON (765), RICARDO (1172), VILLENEUVE (1459), WHITNEY (1525).]

- Revision of *Tabaninæ*, RICARDO, Ann. Nat. Hist. xiv, pp. 349-372.
Tabanidæ of N. America, HINE, pp. 217-249, Ohio Natural. v.
Tabanidæ, *Chrysops* etc., as transmitters of sleeping sickness, BLANCHARD, Arch. parasit. viii, pp. 573-589.
Tabanidæ injurious to stock, N. America, HINE, pp. 57-60, Bull. U. S. Dep. Agric. Ent. xlv, and xlv, pp. 23-25, habits, oviposition.
Chrysops pachycera ♀, ADAMS, p. 442, Kansas Univ. Sci. Bull. ii.
C. lupus, *pikeri*, N. America, WHITNEY, p. 205, Canad. Ent. xxxvi; *C. fulvistigma*, *brimleyi*, N. Carolina, HINE, p. 55, Canad. Ent. xxxvi; *C. coquillettii*, California, HINE, p. 220, Ohio Natural. v : n. spp.
Diachlorus ferrugatus, "yellow-fever fly," BANKS, p. 290, Ent. News Philad. xv.
Dichelacera grandis, Brit. Honduras, RICARDO, p. 371, Ann. Nat. Hist. xiv, n. sp.
Nemorius vitripennis, habits, VILLENEUVE, p. 235, Bull. Soc. ent. France 1904.
Snowiellus n. g. *S. atratus* n. sp., Arizona, HINE, p. 230, Ohio Natural. v.
Tabanus hinei n. n. for *politus* Johns., JOHNSON, p. 15, Psyche xi; *T. 4-punctatus* Wied. to *Therioplectes*, SPEISER, p. 148, Ins. Börse 1904.
T. benedictus, *T. (Therioplectes) typhus*, N. America, WHITNEY, p. 206, Canad. Ent. xxxvi; *T. (Therioplectes) whitneyi*, Massachusetts, JOHNSON, p. 15, Psyche xi; *T. flavidus*, Texas and Mexico, p. 236, *laticornis*, California, *laticornis*, Arizona and Mexico, p. 239, *osburni*, Brit. Columbia, p. 241, *productus*, Wyoming, p. 242, HINE, Ohio Natural. v : n. spp.
Udenocera n. g. *Tabaninæ*, p. 354, for *U. brunneus* n. sp., Ceylon, p. 355, RICARDO, Ann. Nat. Hist. xiv.

LEPTIDÆ, incl. XYLOPHAGIDÆ.

[Cf. ADAMS (8), COQUILLETT (315), DE MEIJERE (934), VILLENEUVE (1459).]

Chrysopila simplex, Java, MEIJERE, p. 97, Bijdr. Dierk. xviii; *C. lucifera*, p. 437, *bella*, *flavibarbis*, p. 438, North America, ADAMS, Kansas Univ. Sci. Bull. ii : **n. spp.**

Leptis pluralis, p. 441, *palpalis*, p. 442, Washington, ADAMS, t. c. **n. spp.**
Symphoromyia flavipalpes, Colorado, ADAMS, p. 439, t. c.; *S. securifera*, California, COQUILLETT, p. 171, P. ent. Soc. Washington vi : **n. spp.**
Xylophagus nitidus, New Hampshire, ADAMS, p. 435, Kansas Univ. Sci. Bull. ii, **n. sp.**

THEREVIDÆ.

[Cf. ADAMS (8), COQUILLETT (313, 315), VILLENEUVE (1459).]

Psilocephala aurantiaca, California, COQUILLETT, p. 177, P. ent. Soc. Washington vi; *P. occipitalis*, p. 443, *lateralis*, p. 444, Arizona, ADAMS, Kansas Univ. Sci. Bull. ii; *P. pruinosa*, Nicaragua, COQUILLETT, p. 91, P. ent. Soc. Washington vi : **n. spp.**

Thereva, synonymy and variation, VILLENEUVE, pp. 171, 172, Feuille Natural. xxxiv.

T. anomala, Arizona, ADAMS, p. 444, Kansas Univ. Sci. Bull. ii, **n. sp.**

ASILIDÆ, MYDASIDÆ.

[Cf. ADAMS (8), BACK (73), BRÈTHES (175), COQUILLETT (315, 318), VILLENEUVE (1459).]

CORTI gives the characters of certain unnamed species of Portuguese *Asilidæ*, Rend. Ist. Lombardo xxxvi, pp. 1071-1073.

Ablautus flavipes, *rubens*, N. America, COQUILLETT, p. 178, P. ent. Soc. Washington vi, **n. spp.**

Anisopogon johnsoni, Colorado, BACK, p. 293, Canad. Ent. xxxvi, **n. sp.**

Asilus crabroniformis, habits and egg, XAMBEU, p. 174, Ann. Soc. Linn. Lyon l.

Cyrtopogon nigricolor, *tibialis*, p. 183, *maculosus*, *varipennis*, p. 184, N. America, COQUILLETT, P. ent. Soc. Washington vi, **n. spp.**

Dasyllis cinerea, p. 289, *fernaldi*, p. 290, N. America, BACK, Canad. Ent. xxxvi, **n. spp.**

Dioctrodes **n. g.** near *Dioctria*, *D. flavipes* **n. sp.**, Missouri, COQUILLETT, p. 181, P. ent. Soc. Washington vi.

Dysmachus harpax, France, VILLENEUVE, pp. 167-173, Feuille Natural. xxxiv, **n. sp.**

Erax tuberculata, S. Texas, COQUILLETT, p. 34, J. N. York Ent. Soc. xii, **n. sp.**

Holopogon latus, S. Texas, COQUILLETT, p. 33, t. c. **n. sp.**

Laphystia flavipes, *limatula*, *opaca*, N. America, COQUILLETT, p. 180, P. ent. Soc. Washington vi, **n. spp.**

Leptogaster virgatus, p. 177, *hirtipes*, p. 178, N. America, COQUILLETT, t. c.; *L. tornowii*, Buenos Aires, BRÈTHES, p. 337, An. Mus. Buenos Aires xi : **n. spp.**

Metapogon **n. g.** near *Cyrtopogon*, p. 181, *M. gilvipes*, *punctipennis* **n. spp.**, N. America, p. 182, COQUILLETT, P. ent. Soc. Washington vi.

Mydas abdominalis, Arizona, ADAMS, p. 434, Kansas Univ. Sci. Bull. ii, **n. sp.**

- Myolestes* n. g. near *Allopogon*, p. 338, *A. lynchii* n. sp., Tucuman, p. 339, BRÈTHES, An. Mus. Buenos Aires xi.
Ospricerus albifuscatus, Florida, BACK, p. 292, Canad. Ent. xxxvi, n. sp.
Saropogon rufus, p. 290, *albifrons*, p. 291, N. America, BACK, t. c.; *S. luteus*, *hyalinus*, p. 185, *semiustus*, p. 186, California, COQUILLETT, P. ent. Soc. Washington vi : n. spp.
Stenopogon and *Scleropogon* distinguished, COQUILLETT, p. 179, P. ent. Soc. Washington vi.
S. nigrifolius, California, COQUILLETT, t. c.; *S. tenebrosus*, *pumilus*, p. 33, *nitens*, p. 34, S. Texas, COQUILLETT, J. N. York Ent. Soc. xii : n. spp.

BOMBYLIIDÆ.

- [Cf. COQUILLETT (315, 318), HINE (688), KÜNCKEL (847), VILLENEUVE (1459).]
Acrotrichus atratus, Mexico, COQUILLETT, p. 176, P. ent. Soc. Washington vi, n. sp.
Anastoechus nitidulus, localities, JOHNSON, p. 16, Psyche xi.
Anthrax harveyi, British Columbia, HINE, p. 88, Canad. Ent. xxxvi, n. sp.
Phthiria unimaculata, S. Texas, COQUILLETT, p. 32, J. N. York Ent. Soc. xii; *P. melanoscuta*, Arizona, *fulvida*, Mexico, p. 172, *marginata*, *vittiventris*, *nubeculosa*, p. 173, *inornata*, *badia*, p. 174, *picturata*, *flaveola*, *amplicella*, p. 175, *bicolor*, p. 176, N. America, COQUILLETT, P. ent. Soc. Washington vi : n. spp.
Ploas alpicola, Lautarets, VILLENEUVE, p. 72, Feuille Natural. xxxiv, n. sp.
Systoechus leucophoeus var. n. *gallicus*, VILLENEUVE, p. 72, Feuille Natural. xxxiv.
Systropus; metamorphosis, KÜNCKEL, pp. 1623-1625, C.R. Ac. Sci. cxxxviii.

ACROCERIDÆ.

- Acrocera fasciata*, habits, JOHNSON, p. 17, Psyche xi.
Oncodes albiventris, Canada, JOHNSON, p. 18, t. c. n. sp.
Opsebius pterodontinus, JOHNSON, p. 16, t. c.

EMPIDÆ.

- [Cf. BEZZI (124, 125).]
COQUILLETT, brief notes on nomenclature of some genera, P. ent. Soc. Washington vi, pp. 51, 52.
Acarterus pallipes, Bombay, BEZZI, p. 335, Ann. Mus. Hungar. ii, n. sp.
Anthepiscopus antipodus, Sydney, BEZZI, p. 339, t. c. n. sp.
Chersodromia lutescens, Sydney, BEZZI, p. 358, t. c. n. sp.
Clinocera (*Wiedemannia*) *microstigma*, Bosnia, BEZZI, p. 201, t. c. n. sp.
Coloboneura argyropalpa, New Guinea, BEZZI, p. 358, t. c. n. sp.
Ctenodrapetis subg. n. cf. *Drapetis*.
Drapetis; catalogue of the genus with the following new names, *distans* (= *divergens* Bezzi), *phaeoptera* (= *obscuripennis* Bezzi), BEZZI, pp. 143-146, Wien. ent. Zeit. xxiii.
D. obscuripennis, p. 351, *xanthopyga*, p. 352, *divergens*, *bihamata*, p. 353, *callosotibia*, p. 354, *D. (Ctenodrapetis)* subg. n. p. 351) *gracilis*, p. 354, New Guinea, *discoidalis*, E. India, *ciliatocosta*, Brisbane, p. 355, *rubrithorax*, p. 356, New Guinea, BEZZI, Ann. Mus. Hungar. ii, n. spp.
Elaphropeza spuria, New Guinea, p. 347, *metatarsata*, Ceylon, p. 348, *bicolor*, Paramatta, *basalis*, Ceylon, p. 349, BEZZI, t. c. n. spp.
Empis hilariformis, p. 340, *cyaneascens*, p. 342, N. S. Wales, *ceylonica*, Pattipola, p. 343, *papuana*, New Guinea, p. 344, BEZZI, t. c. n. spp.

- Halsanalotes setifrons*, N. S. Wales, BEZZI, p. 357, t. c. n. sp.
Hilara huttoni n. n. for *fulvipes* Hutt., BEZZI, p. 360, t. c.
Hybos bisetosus, E. India, p. 324, *pollinosus*, p. 326, *brachystigma*, p. 327, Australia, BEZZI, t. c. n. spp.
Leptopeza pulcherrima, p. 336, *bimaculata*, p. 337, *tachydromiæformis*, p. 338, Australia, BEZZI, t. c. n. spp.
Ptilophyllodromia n. g. *Hemerodromini*, p. 344, *P. biroi* n. sp., New Guinea, p. 345, BEZZI, t. c.
Rhamphomyia pokornyi, p. 198, *anfractuosa*, p. 199, Australia, *nubigena*, p. 200, *chionoptera*, p. 201, Tyrol, BEZZI, t. c. n. spp.
Syndyas parvicellulata, Ceylon and New Guinea, p. 321, *eumera*, New Guinea, p. 323, BEZZI, t. c. n. spp.
Syneches bigoti n. n. for *bicolor* Big., BEZZI, p. 360, t. c.
Syneches; *Epiceia*, *Harpamerus* subgen.; characters, p. 329, *S. dichætophorus*, p. 330, *S. (Epiceia) hyalopterus*, p. 331, *minor*, p. 332, *S. (Harpamerus) dinoscelis*, p. 333, New Guinea, BEZZI, t. c. n. spp.
Tachydromia (Platypalpus) chionochæta, New Guinea, BEZZI, p. 359, t. c. n. sp.

DOLICHOPIDÆ.

- [Cf. ALDRICH (21), COQUILLETT (315), JOHNSON (765), OLDENBERG (993), ROUBAUD (1200), SNODGRASS (1324), VERRALL (1438).]
 Catalogue and tables of British *Dolichopodidæ*, VERRALL, Ent. Mag. xl, pp. 164 etc.
 The male genitalia—hypopygium—of numerous genera are described and figured by SNODGRASS, P. Calif. Ac. (3) iii, pp. 273–294, pls. xxx–xxxiii.
 Marine larvæ—supposed *Aphrosylus*—commensal with *Balanus*, described, ROUBAUD, pp. 338–340, Bull. Mus. Paris ix.
Agonosoma, *Psilopus* and *Sciapus*, synonymy, ALDRICH, p. 246, Canad. Ent. xxxvi.
Argyra aldrichi, New Jersey, JOHNSON, p. 18, Psyche xi, n. sp.
Dolichopus; European catalogued and classified, VERRALL, pp. 241, 242, Ent. Mag. xl; *Dolichopus andalusiacus*, p. 226, *lineaticornis*, p. 227, characters, VERRALL, t. c.
D. laticola, England, VERRALL, p. 197, t. c. n. sp.
Psilopodinus = (*Gnamptopsilopus* Aldr.), ALDRICH, p. 247, Canad. Ent. xxxvi.
Saucropus = (*Neurigona*), the European, OLDENBERG, pp. 65–81, pl. i, Zeitschr. Hym. Dipt. iv.
S. cilipes, Macugnaga, p. 71, *lineatus*, Germany, p. 73, id. t. c. n. spp.
Sciapus pruinosis, Florida, COQUILLETT, p. 186, P. ent. Soc. Washington vi, n. sp.

PLATYPEZIDÆ.

- Agathomyia*, table of European, with distinction of *wankowiczii* and *aurantiaca*, CZERNY, pp. 137–139, Wien. ent. Zeit. xxiii.

SYRPHIDÆ.

- [Cf. ADAMS (8), BRÈTHES (329), DE MEIJERE (934, 935), VERRALL (1439), WILLIS & BURKILL (1533).]
Syrphidæ of Normandy, list, PORTEVIN, Feuille Natural. xxxiv, pp. 209–213.
 Annotated list of the *Syrphidæ* of British Columbia, 78 species, OSBURN, Canad. Ent. xxxvi, pp. 213 etc.

Syrphidæ and flowers, Clova, WILLIS & BURKILL, Ann. Scott. Nat. Hist. 1904, pp. 166-168.

Baccha bonariensis, Argentina, BRÈTHES, p. 340, An. Mus. Buenos Aires xi, n. sp.

Callicera ycerburyi, Scotland, VERRALL, p. 229, Ent. Mag. xl, n. sp.

Ceria trinotata, Darjiling, MEIJERE, p. 97, Bijdr. Dierk. xviii, n. sp.

Helophilus curvigaster Macq., characters, MEIJERE, p. 99, t. c.

Helophilus caudatus, Aru islands, MEIJERE, p. 177, Notes Leyden Mus. xxiv, n. sp.

Microdon, the trophi of the larva, HOLMGREN, p. 347, Zool. Anz. xxvii.

M. metallicus, Darjiling, MEIJERE, p. 98, Bijdr. Dierk. xviii, n. sp.

Milesia semifulva, Darjiling, MEIJERE, p. 99, pl. viii, fig. 16, t. c. n. sp.

Myiatropa florea, larval habits, GIARD, p. 88, Bull. Soc. ent. France 1904.

Nausigaster scutellaris, Arizona, ADAMS, p. 446, Kansas Univ. Sci. Bull. ii, n. sp.

Pipiza radicum = (*pistica* Will.), COQUILLETT, p. 200, P. ent. Soc. Washington vi.

Rhingia cineta, Java, MEIJERE, p. 101, Bijdr. Dierk. xviii, n. sp.

Sphyzimorpha snowi, Arizona, ADAMS, p. 447, Kansas Univ. Sci. Bull. ii, n. sp.

Syrphus ribcsii and others, larvæ, LAMPA, p. 212, pl. figg. 1-6, Ent. Tidskr. xxv; *S. viridiceps*, note, FROGGATT, p. 610, plate, Agric. Gaz. N. S. W. xv.

Volucella; eggs on wasps' nests, BARBER, pp. 70, 71, P. ent. Soc. Washington vi.

V. ursina, Darjiling, MEIJERE, p. 101, Bijdr. Dierk. xviii, n. sp.

Xanthandrus comtus, larval habits, CHAPMAN, p. lxx, P. ent. Soc. London 1904.

CONOPIDÆ.

[Cf. COQUILLETT (313), DE MEIJERE (933, 934).]

DE MEIJERE discusses and describes the larvæ and larval habits of several European members of the family and gives a historical account of previous knowledge, also copulation, and eggs, Tidschr. Ent. xlv, pp. 144-225, pls. xiv-xvii.

Affinities of *Conopidæ*, with *Acalyptrateæ*, DE MEIJERE, as above.

Conops, *Zodion* and *Myopa*, notes on larvæ, DE MEIJERE, as above; *C. javanicus*, characters, DE MEIJERE, p. 102, Bijdr. Dierk. xviii.

C. pallifrons, Nicaragua and Mexico, COQUILLETT, p. 92, P. ent. Soc. Washington vi, n. sp.

Ocemymia simillima, Java, DE MEIJERE, p. 103, Bijdr. Dierk. xviii, n. sp.

Physcocephala rufipes and *vittata*, larvæ, DE MEIJERE, as above.

Sicus ferrugineus, larvæ and larval habits, DE MEIJERE, as above.

PHORIDÆ and TERMITOXENIIDÆ.

Phora, in nests of ants and *Bombus*, COLLIN, p. xxi, P. ent. Soc. London 1904.

Phora, mining in wings of living butterflies, *Morpho* etc., SCHULZ, Zool. Anz. xxviii, p. 42.

Termitoxenia jägerskiöldi, Soudan, WASMANN, p. 16, Jägerskiöld exp. No. 13, n. sp.

CESTRIDÆ.

[Cf. CONDORELLI (305), COQUILLETT (317), GRÜNBERG (641), WARD (1472, 1473).]

Cephenomyia rufibarbis and *Hypoderma diana*, habits, YERBURY, pp. lxvii, lxviii, P. ent. Soc. London 1904.

Cuterebra grisea, Canada, COQUILLETT, p. 11, Canad. Ent. xxxvi, n. sp.

Dermatobia hominis, larva, attacks in Costa Rica, WARD (1472, 1473).

Hypoderma bovis attacking man in Sicily, CONDORELLI (305).

Rhinestrus hippopotami, Cameroons, larva, GRÜNBERG, p. 35, pl., figg. 1, 2, SB. Ges. naturf. Berlin, n. sp.

MUSCIDÆ CALYPTRATÆ.

[Cf. AUSTEN (65–67), BECKER (96), BISCHOF (130), BLANCHARD (136), BRUMPT (191, 192), COQUILLETT (313, 314, 315), FROGGATT (564), GILLETTE (605), HUTTON (727, 730), JOHNSON (765), KRAMER (841), LELEAN (873), LESNE (879), DE MEIJERE (934, 935), SAMBON (1205), STEIN (1342, 1343), TOWNSEND (1393), WESCHÉ (1514).]

Classification of *Muscidæ* on palpi, WESCHÉ, Tr. Linn. Soc. London ix, pp. 219 etc., pl. x.

PANDELLE's work on the *Muscidæ* of France is concluded by a catalogue, and by index etc. to Vol. II (1010).

Alophora magnapennis, Canada, JOHNSON, p. 19, Psyche xi, n. sp.

Anacamptomyia n. g. near *Phorocera*, p. 79, *A. africana* n. sp., Algoa Bay, p. 81, BISCHOF, Verh. Ges. Wien liv.

Anthomyia spreta, larval habits, CHAPMAN, p. xlviii, P. ent. Soc. London 1905.

Antistasea n. g. *Blepharipoda*, p. 82, *A. fimbriata* n. sp., Algoa Bay, p. 83, BISCHOF, Verh. Ges. Wien liv.

Aricia flavithorax, p. 416, *venicurva*, p. 417, *latinervis*, p. 419, *flavidicincta*, p. 420, *basicincta*, p. 421, *curvata*, p. 423, *presuturalis*, p. 424, *mellina*, p. 426, *orbitalis*, p. 427, N. W. S. America, *pulvillata*, Carolina, p. 422, STEIN, Ann. Mus. Hungar. ii, n. spp.

Auckmeromyia luteola ?, larval habits, CHRISTY, DUTTON & TODD, Brit. Med. J. 1904, ii, pp. 664–666; *A. luteola*, larva as an ectoparasite of man, LELEAN, p. 245, Brit. Med. J. 1904, i.

Bengalia depressa, attacking man, TOWNSEND, pp. 7–9, P. Rhodesia Ass. iv.

Calliphora in Australia, *C. oceanicæ* injurious, FROGGATT, pp. 1205–1211, pl., Agric. Gaz. N. S. W. xv.

C. cockaynei, Campbell isld., HUTTON, p. 155, Tr. N. Zealand Inst. xxxvi, n. sp.

Cænosiæ tumidiventris, Java, STEIN, p. 112, Tijdschr. Ent. xlvii; *C. pilosa*, p. 483, *nigrohalterata*, p. 484, *declivis*, p. 486, *vittifera*, p. 487, S. America, *compressa*, N. America, *recedens*, p. 489, *genupuncta*, p. 491, *lineata*, p. 492, S. America, STEIN, Ann. Mus. Hungar. ii: n. spp.

Devetia n. g. *Phania*, p. 95, *D. atra* n. sp., Algoa Bay, p. 97, BISCHOF, Verh. Ges. Wien liv.

Distichona auriceps, Mexico, COQUILLETT, p. 186, P. ent. Soc. Washington vi, n. sp.

Empheromyia n. g. near *Cuphocera*, p. 87, *E. atra* n. sp., Rio Grande do Sul, p. 88, BISCHOF, Verh. Ges. Wien liv.

Epalpus bolivianus, *lindigii*, *flavoscutellatus*, p. 90, *semiflavus*, *nattereri*, p. 91, *fuscipennis*, *callanganus*, p. 92, *semiater*, *brunneipennis*, p. 93, S. America, BISCHOF, t. c. n. spp.

- Galapagomyia* n. g. for *Microcerella steindachneri* B. & B., and *G. rufo-maculata* Macq., BISCHOF, p. 97, t. c.
- Glossina*, revision of characters and synonymy, AUSTEN, pp. 151-155, Ann. Nat. Hist. xiv; *G. tachinoides* Westw. valid, =(decorsei Brumpt), BRUMPT, p. 431, C.R. Soc. Biol. lvii; *G.*, larvæ, habits, notes, AUSTEN, Brit. Med. J. 1904, ii, pp. 658-662; *G.* and transmission of disease, SAMBON (1205); *G.* and sleeping-sickness, BLANCHARD & BRUMPT, Arch. parasit. viii, pp. 573-589.
- G. decorsei*, Centr. Africa, BRUMPT, p. 628, C.R. Soc. Biol. lvi, n. sp.
- Hæmatobia exigua*, Java, MEIJERE, p. 104, Bijdr. Dierk. xviii, n. sp.
- Homalomyia canicularis*, larva in human stomach, FLORENTIN, C.R. Soc. Biol. lvi, p. 525.
- H. flavicincta*, p. 453, *hirtifemur*, p. 457, Colombia, STEIN, Ann. Mus. Hungar. ii, n. spp.
- Hydrophoria dexiaria*, Colombia, STEIN, p. 475, t. c. n. sp.
- Hydrotæa villosa*, Colombia, STEIN, p. 449, t. c. n. sp.
- Hylemyia spinilamellata*, Sitka, p. 476, *conosiæformis*, White Mountains, p. 477, STEIN, t. c. n. spp.
- Idiella*, notes on Javanese, MEIJERE, p. 105, Bijdr. Dierk. xviii.
- Limnophora chlorogaster*, Big. to *Aricia*, description, STEIN, p. 425, Ann. Mus. Hungar. ii.
- L. prominens*, p. 106, *nigripennis*, p. 108, Java, STEIN, Tijdschr. Ent. xlvii; *L. pauciseta*, p. 460, *marginata*, p. 461, *atrovittata*, p. 463, *compressifrons*, p. 464, *atriskama*, p. 466, *aterrima*, *atra*, p. 469, S. America, STEIN, Ann. Mus. Hungar. ii: n. spp.
- Lispa*, monograph of Palæarctic, with 9 spp. n., BECKER, Zeitschr. Ent. Breslau xxix, pp. 1-70.
- L. bohémica*, p. 53, *brunnica*, p. 40, *cinifera*, p. 41, *cochlearia*, p. 32, *comitata*, p. 34, *flavinervis*, p. 20, *odessa*, p. 37, *persica*, p. 22, *seticincta*, p. 38, Palæarctic region, BECKER, Zeitschr. Ent. Breslau xxix; *L. sericopalpis*, Java, STEIN, p. 110, Tijdschr. Ent. xlvii: n. spp.
- Micropalpus leopoldensis* to *Empheremyia*, BISCHOF, p. 88, Verh. Ges. Wien liv.
- Musca domestica* as disseminator of disease, AUSTEN, J. R. Army Med. Corps June 1904, 16 pp., 1 pl.
- M. modesta*, Java, MEIJERE, p. 106, Bijdr. Dierk. xviii, n. sp.
- Myopina appendiculata*, Peru, STEIN, p. 473, Ann. Mus. Hungar. ii, n. sp.
- Parachetolyga* n. g. near *Chetolyga*, p. 83, *metopia* n. sp., Rio Grande do Sul, p. 84, BISCHOF, Verh. Ges. Wien liv.
- Paradidyma orbitalis*, Nicaragua, COQUILLETT, p. 92, P. ent. Soc. Washington vi, n. sp.
- Pegomyia cerealis*, Colorado, GILLETTE, p. 14 Bull. Colorado Exp. Stat. 94; *P. bucculenta*, California, COQUILLETT, p. 188, P. ent. Soc. Washington vi: n. spp.
- Phorocera aurea*, *exitiosa*, *tecta*, *casta*, p. 151, *inconspicua*, *fulvipes*, *brouni*, p. 152, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxvi, n. spp.
- Polychnomyia* n. g. near *Podomyia*, p. 85, *P. flavohalterata* n. sp., Algoa Bay, p. 86, BISCHOF, Verh. Ges. Wien liv.
- Pseudoformosia moneta*, note, MEIJERE, p. 103, Bijdr. Dierk. xviii.
- P. pauper*, Halmahera, MEIJERE, p. 178, Notes Leyden Mus. xxiiv, n. sp.
- Ptilogonia* n. g. near *Germaria*, p. 94, *P. neotropica* n. sp., Rio Grande do Sul, p. 95, BISCHOF, Verh. Ges. Wien liv.
- Sarcophaga*, variation of European, genitalia, suggestions for sinking various species, KRAMER, pp. 347-349, Zeitschr. Hym. Dipt. iv.
- S. amblycoryphæ*, Massachusetts, COQUILLETT, p. 187, P. ent. Soc. Washington vi, n. sp.
- Schoenomyza guttipennis*, Buenos Ayres, p. 493, *spinicosta*, Peru, p. 495, STEIN, Ann. Mus. Hungar. ii, n. spp.

- Spilogaster niveipalpis*, p. 90, *dimidiata*, p. 100, *lineata*, p. 102, *apicalis*, p. 103, *flavidipennis*, p. 104, *lateralis*, p. 105, Java, STEIN, Tijdschr. Ent. xlvii; *S. inermis*, p. 433, *multomaculata*, p. 434, *latipennis*, p. 435, *tesselata*, p. 438, *geminata*, p. 439, *marginipennis*, p. 440, *apicata*, p. 442, *veniseta*, p. 443, *biseta*, p. 444, *marginalis*, p. 445, *plumata*, p. 446, *fulvisquama*, p. 447, *angustifrons*, p. 448, S. America, STEIN, Ann. Mus. Hungar. ii: n. spp.
- Tachina psychidivora*, W. Australia, COQUILLETT, p. 137, P. ent. Soc. Washington vi, n. sp.
- Trichopticus spiniger*, Colorado, STEIN, p. 428, Ann. Mus. Hungar. ii, n. sp.

MUSCIDÆ ACALYPTRATÆ.

- [Cf. ADAMS (8-10), BECKER (95), BRÈTHES (175), COQUILLETT (313-315, 317, 318), CZERNY (338, 339), GIARD (599), GUILLIAUME (646), HINE (690), HUTTON (728), KERTÉSZ (789), DE MEIJERE (934), MEUNIER (945), POYNTON (1105).]
- Actenoptera* n. n. for *Gymnomyza* Strobl, CZERNY, p. 202, Wien. ent. Zeit. xxiii.
- Agromyza simplex* in Europe, GIARD, p. 179, Bull. Soc. ent. France 1904.
- A. tamiola*, California, COQUILLETT, p. 191, P. ent. Soc. Washington vi, n. sp.
- Anastrepha pallens*, S. Texas, COQUILLETT, p. 35, J. N. York Ent. Soc. xii, n. sp.
- Bischofia varia*, Canada, COQUILLETT, p. 12, Canad. Ent. xxxvi, n. sp.
- Blesochaetophora* n. g. for *Leria picticornis* Big., transferred to *Drosophilide*, CZERNY, p. 206, Wien. ent. Zeit. xxiii.
- Carnia virida*, Texas, HINE, p. 65, Ohio Natural. iv, n. sp.
- Chaetoclusia* n. g. *Heteroneuridae*, p. 93, for *C. bakeri* n. sp., Nicaragua, p. 94, COQUILLETT, P. ent. Soc. Washington vi.
- Chiromyia* (= *Scyphella*), type, synonymy, Bezzi, pp. 177-181, Atti Mus. Milano xliii.
- Chlorops lineata*, account, NOEL, p. 190, Naturaliste 1904.
- C. pulla*, *lasciva*, p. 303, *rubrivittata*, *annulata*, *certima*, p. 304, N. America, ADAMS, Ent. News Philad. xv; *C. capillata*, Georgia and Nicaragua, COQUILLETT, p. 98, P. ent. Soc. Washington vi: n. spp.
- Clusiodes* n. n. for *Heteroneura* Fall. 1823, nec Fall. 1810, COQUILLETT, p. 93, P. ent. Soc. Washington vi.
- Cremifania* n. g. *Ochthiphilini*, p. 169, *C. nigrocellulata* n. sp., Austria, p. 170, CZERNY, Wien. ent. Zeit. xxiii.
- Dacus diversus*, India and Ceylon, COQUILLETT, p. 139, P. ent. Soc. Washington vi, n. sp.
- Drosomyia* n. g. near *Drosophila*, *picta* n. sp., Java, pl. viii, figg. 30, 31, MEIJERE, p. 114, Bijdr. Dierk. xviii.
- Drosophila ordinaria*, New Hampshire, COQUILLETT, p. 190, P. ent. Soc. Washington vi, n. sp.
- Dryomyza aristatis* Coq. to *Bischofia*, COQUILLETT, p. 12, Canad. Ent. xxxvi.
- Elachiptera longula*, larval habits, BRITTON, p. 214, Rep. Connecticut exp. Station 1904.
- E. bilineata*, Arizona, ADAMS, p. 453, Kansas Univ. Bull. ii, n. sp.
- Eurygnathomyia* n. g. for *Heteromyza opomyzina* Zett., CZERNY, p. 208, Wien. ent. Zeit. xxiii.
- Euxesta juncta*, Nicaragua, *fenestrata*, Guatemala, COQUILLETT, p. 95, P. ent. Soc. Washington vi; *E. argentina*, Tucuman, BRÈTHES, p. 342, An. Mus. Buenos Aires xi: n. spp.

- Helomyzidæ*, in Wien. ent. Zeit. xxiii, p. 199, CZERNY commences a revision of the family; this portion contains much synonymy for which reference must be made to the work: *H. crimimana* n. n. for *pilimana* Rond. p. 277; *Helomyzidæ* in amber, see Palæont., p. 125.
- Helomyza setilaris*, Calabria, p. 234, *flagripes*, Switzerland, p. 235, *stroblüi*, Styria, p. 241, *oldenbergii*, Germany, p. 281, CZERNY, Wien. ent. Zeit. xxiii, n. spp.
- Heteromyza opomyzina*, cf. *Eurygnathomyia*.
- Hippelates bilineatus*, Java, MEIJERE, p. 113, pl. viii, figg. 27, 28, Bijdr. Dierk. xviii; *H. splendens*, Wyoming, ADAMS, p. 453, Kansas Univ. Sci. Bull. ii: n. spp.
- Icterica fasciata*, Arizona, ADAMS, p. 449, Kansas Univ. Sci. Bull. ii; *I. apicalis*, Nicaragua, COQUILLETT, p. 96, P. ent. Soc. Washington vi: n. spp.
- Lauvancia signatifrons*, Texas, COQUILLETT, p. 189, P. ent. Soc. Washington vi, n. sp.
- Leria picticornis* Big., cf. *Blæsochaetophora*.
- Limnia castanea*, p. 153, *striata*, p. 154, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxvi, n. spp.
- Myrmemorpha rufescens*, Java, MEIJERE, p. 113, Bijdr. Dierk. xviii, n. sp.
- Nerius longicornis*, N. America, COQUILLETT, p. 188, P. ent. Soc. Washington vi, n. sp.
- Notiphila frontalis*, Nicaragua, COQUILLETT, p. 97, t. c. n. sp.
- Octiphilini*, taxonomy, CZERNY, pp. 167-169, Wien. ent. Zeit. xxiii.
- Opomyza* sp., in profusion in hot spring, POYNTON, p. 170, Tr. N. Zealand Inst. xxxvi.
- Ortalis comperei*, Bangalore, COQUILLETT, p. 138, P. ent. Soc. Washington vi, n. sp.
- Parochthiphila* n. g. for *O. coronata* and *inconstans*, CZERNY, p. 169, Wien. ent. Zeit. xxiii.
- Pelethophila* Hag. is *Psila* Meig. 1803, BEZZI, p. 175, Atti Mus. Milano xliii; *P.*, Palæarctic, table, BECKER, pp. 129-133, Zeitschr. Hym. Dipt. iv.
- P. quadrinotata*, Teneriffe, p. 132, *minima*, p. 133, Livland, BECKER, t. c. n. spp.
- Platyparea pæcilopectera*, brief note, BIELER, Arch. Sci. Nat. xviii, p. 200; *P. pæcilopectera*, natural history, LESNE, pp. 1006-1008, C.R. Soc. Biol. lvi.
- Pseudeurina* n. g. *Chloropina*, *maculata* n. sp., Java, pl. viii, figg. 24, 25, MEIJERE, p. 112, Bijdr. Dierk. xviii.
- Psilopa fulvipennis*, Louisiana, HINE, p. 64, Ohio Natural. iv, n. sp.
- Ptilona dunlopi* Wulp to *Rioxa*, MEIJERE, p. 110, Bijdr. Dierk. xviii.
- Rhabdochaeta* n. g. near *Ceratitis*, *R. pulchella* n. sp., Java, pl. viii, figg. 22, 23, MEIJERE, p. 109, t. c.
- Rhagoletis cingulata*, natural history, CHITTENDEN, pp. 70-75, cuts, Bull. U. S. Dep. Agric. Ent. xlv.
- Rivellia frugalis*, Ceylon, *sinuosa*, India, COQUILLETT, p. 139, P. ent. Soc. Washington vi, n. spp.
- Sapromyza obscura*, Java, MEIJERE, p. 111, Bijdr. Dierk. xviii; *S. varia*, *albipes*, p. 94, *triseriata*, p. 95, Nicaragua, COQUILLETT, P. ent. Soc. Washington vi; *S. picticornis*, Nicaragua, COQUILLETT, p. 189, t. c.: n. spp.
- Scutops* n. g. near *Opomyza*, *S. fascipennis* n. sp., Nicaragua, COQUILLETT, p. 97, t. c.
- Scyphella pumilio*, Java, MEIJERE, p. 113, pl. viii, fig. 29, Bijdr. Dierk. xviii, n. sp.
- Sepsis javanica*, Java, MEIJERE, p. 107, t. c.; *S. pleuralis*, S. Texas, COQUILLETT, p. 35, J. N. York Ent. Soc. xii: n. spp.
- Sinophthalmus* n. g. *Geomyzidæ*, p. 190, *S. pictus* n. sp., California, p. 191, COQUILLETT, P. ent. Soc. Washington vi.

- Siphonella nigrirostra*, Grenada, p. 103, *parva, quinquelineata*, p. 104, U. S., ADAMS, *Psyche* xi, n. spp.
Tephritis dioscurea, larval habits, TROTTER, p. 5, *Marcellia* iii.
Tetanocera inops, Washington, ADAMS, p. 448, *Kansas Univ. Sci. Bull.* ii, n. sp.
Trypeta solidaginis, metamorphosis, FIELD, p. 309, *Ent. News Philad.* xv.
Trypetidæ of Belgium, 42 spp., catalogue, GUILLIAUME (646).
Turriger n. g. *Sapromyzides*, p. 73, *T. frontalis* n. sp., E. India, p. 74, KERTÉSZ, *Ann. Mus. Hungar.* ii.
Urellia flava, conjuncta, p. 451, *occidentalis*, p. 452, N. America, ADAMS, *Kansas Univ. Sci. Bull.* ii, n. spp.
Xenaspis vespoides, Darjiling, MEIJERE, p. 107, *Bijdr. Dierk.* xviii, n. sp.
Zygænula albofasciata, India, MEIJERE, p. 108, pl. viii, fig. 21, t. c. n. sp.

DIPTERA, PUPIPARA (incl. STREBLIDÆ).

[Cf. RAINBOW (1117), REED (1123), SPEISER (1328-1331).]

- The affinities of *Streblidæ*, and characters of *Trichobius major*, BRUES; pp. 131-134, cuts, *Bull. Amer. Mus.* xx.
Braula cæca, note on habits, DE MEIJERE, p. 139, *Ent. Ber. Nederland.* i.
Craterhina pallida Oliv.=(*lonchoptera* Olf.), SPEISER, p. 389, *Ann. Mus. Hungar.* ii.
Hippobosca longipennis, characters, p. 332, *fossulata*, characters and locality, p. 333, *H. rufipes*=(*albonotata* Rond.), p. 334, SPEISER, *Ann. Mus. Genova* xli.
Lipoptena depressa Say=(*mazamæ* Rond.); SPEISER, p. 334, t. c.
L. chalcomelena, Sinai on *Capra*, SPEISER, p. 178, *Zeitschr. Hym. Dipt.* iv, n. sp.
Lynchia simillima (=Olf. *spinifera* Wulp 1880 nec Leach), Java, SPEISER, p. 337, *Ann. Mus. Genova* xli, n. sp.
Myiophthiria reduvioides=(*capsoides* Rond.), SPEISER, p. 349, t. c.
Nycteribia pteropus, Carpentaria, RAINBOW, p. 78, *Rec. Austral. Mus.* v, n. sp.
Olfersia longipalpis, characters, =(*longirostris* Wulp), SPEISER, p. 88, *Zeitschr. Hym. Dipt.* iv; *O. ænescens* Thoms. to *Pseudolfersia*, p. 83, SPEISER, t. c.
O. acromialis, p. 386, *dioxyrhina*, p. 387, New Guinea, SPEISER, *Ann. Mus. Hungar.* ii; *O. chalcotampira*, New Guinea, SPEISER, p. 335, *Ann. Mus. Genova* xli : n. spp.
Ornitheza odontoscelis, Hungary, on *Saxicola*, SPEISER, p. 392, *Ann. Mus. Hungar.* ii; *O. pallipes*, Europe, on *Strix*, SPEISER, p. 177, *Zeitschr. Hym. Dipt.* iv : n. spp.
Ornithoctona; variability and synonymic difficulties, pp. 339-343, *O. bellardiana*, p. 344, *australasia*, p. 345, characters, SPEISER, *Ann. Mus. Genova* xli; *O. erythrocephala* Leach=(*Ornithomyia gemina* Thoms.), SPEISER, p. 82, *Zeitschr. Hym. Dipt.* iv.
O. vitrina, Tonga islds., p. 343, *melæna*, Sumatra, p. 347, SPEISER, *Ann. Mus. Genova* xli, n. spp.
Ornithoea stipituri Schin. (as *Ornithomyia*)=(*distenta* Speiser), SPEISER, p. 86, *Zeitschr. Hym. Dipt.* iv.
Ornithomyia obscurata Walk., characters, SPEISER, p. 347, *Ann. Mus. Genova* xli; *O. fringillina* Curt.=(*ptenoletis* Löw.), p. 83, *O. fur* Schin., characters, p. 85, *O. pusilla* Schin. to *Ornithoea*, localities, pp. 86, 87, *O. avicularia*=(*nigricornis* Er.), p. 87, SPEISER, *Zeitschr. Hym. Dipt.* iv; *O. brunnea* Oliv. to *Lynchia*, SPEISER, p. 388, *Ann. Mus. Hungar.* ii.

- O. chilensis*, Concepcion, REED, p. 152, Revist. chilena viii, n. sp.
Ornithopertha nitens and *geniculata* Big., distinguished, SPEISER, p. 394, Ann. Mus. Hungar. ii.
O. anthracina, Honduras, SPEISER, p. 393, t. c. n. sp.
Ortholfersia macleayi, classified and described, SPEISER, p. 390, t. c. n. sp.
Pseudolfersia Leach var. = (*Olfersia sulcifrons* Thoms.), SPEISER, p. 82, Zeitschr. Hym. Dipt. iv.
Stilbometopa podopostyla, Rio Grande do Sul, SPEISER, p. 394, Ann. Mus. Hungar. ii, n. sp.

APHANIPTERA, (or SIPHONAPTERA).

- [Cf. BAKER (76), KOHAUT (824, 825), OLIVIER (995), RAINBOW (1116), ROTHSCHILD (1191-1193), SEMENOW (1277), TIRABOSCHI (1387, 1388).]
- The systematic position and classification of *Aphaniptera* (in Russian), SEMENOW, p. 277-288, Rev. Russe Ent. 1904.
- BAKER catalogues the family, and revises the American forms, P. U. S. Mus. xxvii, pp. 365-469, pls. x-xxvi.
- Article on *Aphaniptera*, in connection with plague, TIRABOSCHI, Arch. parasit. viii, pp. 205-310.
- Fleas on rats, TIRABOSCHI (1388).
- Anomiopsyllus* n. g. for *Typhlopsylla nudata* Bak., BAKER, p. 425, P. U. S. Mus. xxvii.
- Ceratophyllus italicus*, Italy, on rats, TIRABOSCHI, p. 266, cuts, Arch. parasit. viii; *C. henleyi*, Egypt, ROTHSCHILD, p. 3, Entomologist 1904; *C. hilli*, Sydney, p. 622, pl. xi, figg. 43, 44, *woodwardi*, W. Australia, p. 623, pl. x, fig. 41, and xi, fig. 42, *thomasi*, Australia, p. 625, pl. xi, figg. 45, 48, *zethi*, Gippsland, p. 626, pl. xi, fig. 50, and xii, fig. 52, *ochi*, Victoria, p. 628, pl. xi, fig. 49, and xii, fig. 54, *novæguineæ*, New Guinea, p. 629, pl. xiii, figg. 66, 67, *ahalæ*, p. 631, pl. xi, fig. 51, xii, fig. 55, and xiii, fig. 60, *alladinis*, p. 632, pl. xii, fig. 53, India, *endymionis*, Chile, p. 634, pl. xiv, fig. 70, *agrippinæ*, p. 634, pl. xii, figg. 56, 57, and xiii, figg. 62, 64, *dorippæ*, p. 636, *numæ*, p. 637, pl. xii, fig. 58, and xiii, figg. 59, 63, 65, *octavii*, p. 638, pl. xiii, fig. 61, Cape Colony, ROTHSCHILD, Nov. Zool. xi; *C. dentatus*, Idaho, on *Lynx*, p. 390, *perpinnatus*, Queen Charlotte islds., p. 391, *tuberculatus*, Idaho, on *Citellus*, p. 393, *alaskensis*, Alaska, on *Citellus*, p. 394, *californicus*, California, p. 395, *oculatus*, Washington, p. 396, *ciliatus*, California, p. 397, *pseudarctomys*, New York, p. 399, *leucopus*, New York, on *Peromys*, p. 401, *labiatus*, Idaho, on *Lynx*, p. 402, *sexdentatus*, California on *Neotoma*, p. 403, *wagneri*, Idaho, on *Peromyscus*, p. 405, *asio*, Massachusetts, on *Megascops*, p. 406, *canadensis*, Ottawa, p. 407, *vison*, New York, on *Putorius*, p. 408, *lucidus*, Colorado, p. 410, *arctomys*, New York, p. 411, *proximus*, California, p. 412, *idahoensis*, Idaho, p. 413, *petiolatus*, Idaho, on *Lynx*, *eremicus*, Arizona, on *Peromyscus*, *stylosus*, Oregon, on *Aplodontia*, BAKER, P. U. S. Mus. xxvii : n. spp.
- Ceratopsylla palposus*, Brit. Columbia, p. 652, ROTHSCHILD, Nov. Zool. xi; *C. wolffsohni*, Paraguay, ROTHSCHILD, p. 147, Revist. chilena viii : n. spp.
- Chatopsylla mikado*, Japan, ROTHSCHILD, p. 645, pl. xiv, fig. 76, Nov. Zool. xi, n. sp.
- Ctenocephalus serraticeps* var. *murina*, TIRABOSCHI, p. 259, cut p. 260, Arch. parasit. viii.
- Ctenophthalmus pseudagyrtes*, characters, p. 641, pl. xiv, figg. 73, 78, and xv, fig. 81, ROTHSCHILD, Nov. Zool. xi.

- C. pseudagyrtis*, p. 421, *yenalis*, p. 424, N. America, BAKER, P. U. S. Mus. xxvii; *C. wenmanni*, British Columbia, p. 642, pl. xiv, figg. 75, 77, 79, *antiquorum*, Brazil, p. 643, pl. xiv, fig. 72, and xv, figg. 80, 82, ROTHSCHILD, Nov. Zool. xi : n. spp.
- Ctenopsyllus granti*, British Columbia, p. 646, pl. xv, figg. 84, 87, and xvii, fig. 91, *aganippes*, Cape Colony, p. 647, pl. xv, fig. 83, and xvi, fig. 90, *brooksi*, British Columbia, p. 649, pl. xv, figg. 86, 88, and xvi, fig. 89, *hygini*, Canada, p. 650, pl. xv, fig. 85, and xvi, figg. 93, 94, *hyrtaci*, British Columbia, p. 652, pl. xvi, figg. 92, 95, ROTHSCHILD, t. c.; *C. hesperomys*, New Hampshire, BAKER, p. 428, P. U. S. Mus. xxvii : n. spp.
- Lycopsylla* n. g. near *Pulex*, *L. novus* n. sp., N. S. Wales, pl. vii, figg. 1-4, ROTHSCHILD, p. 602, Nov. Zool. xi.
- Malacopsylla* = (*Megapsylla* Baker), ROTHSCHILD, p. 603, t. c.
- M. androclii*, Brazil, p. 604, pl. vii, fig. 10 and viii, figg. 11-15, *agenoris*, Argentina, p. 606, pl. vii, figg. 5-9, and viii, fig. 13, ROTHSCHILD, t. c. n. spp.
- Pulex irritans*, *simulans*,? identical, WEBSTER, p. 244, Canad. Ent. xxxvi.
- P. murinus*, Italy on rats (?= *cheopis* Rothsch.), TIRABOSCHI, p. 252, cut, p. 251, Arch. parasit. viii; *P. mycerini*, p. 1, *ramesis*, *pyramidis*, p. 3, Egypt, ROTHSCHILD, Entomologist 1904; *P. creusæ*, p. 608, pl. viii, fig. 18, and ix, fig. 25, *erilli*, p. 610, pl. viii, figg. 16, 17, and ix, fig. 22, *eridos*, p. 611, pl. viii, fig. 21, and ix, fig. 23, *riggenbachi*, p. 611, pl. viii, figg. 19, 20, and ix, fig. 24, Cape Colony, *australis*, Mexico and S. America, p. 613, pl. ix, fig. 29, and x, figg. 34, 36, *cleophontis*, Buenos Aires, p. 614, pl. x, fig. 32, *concitus*, p. 615, pl. x, figg. 38, 40; *simonsi*, p. 616, pl. ix, fig. 30, and x, fig. 37, Bolivia, *cocyti*, p. 617, pl. ix, fig. 26, and x, fig. 31, *corfidii*, p. 619, pl. ix, fig. 27, and x, fig. 33, Chile, *klagesi*, Venezuela, p. 620, pl. ix, fig. 28, and x, figg. 35, 39, ROTHSCHILD, Nov. Zool. xi; *P. brasiliensis*, on *Mus*, p. 379, *lutzii*, on *Grison*, p. 380, S. America, *anomalous*, Colorado, p. 381, *affinis*, Arizona on *Lepus*, p. 382, *lynx*, Idaho on *Lynx*, p. 383, BAKER, P. U. S. Mus. xxvii : n. spp.
- Sarcopsylla rhynchopsylla*, Italy, on rats, TIRABOSCHI, p. 309, Arch. parasit. viii, n. sp.
- Stephanocircus* and *Hystriehopsylla*, distinguished, species of *S.*, synonymy of species found on *Dasyurus maculatus*, RAINBOW, pp. 53-55, Rec. Austral. Mus. v.
- Typhloceras rosenbergi*, Ecuador, p. 639, pl. xiii, figg. 68, 69, and xiv, figg. 71, 74, ROTHSCHILD, Nov. Zool. xi, n. sp.
- Typhlopsylla tristis* to *Ceratophyllus*, p. 625, pl. xi, figg. 45, 47, ROTHSCHILD, t. c.
- T. monticola*, Bosnia, KOHAUT, p. 87, Ann. Mus. Hungar. ii, n. sp.; also p. 88, Allatt. Kozl. Magyar Tars. iii.
- Xestopsylla* n. g. for *Sarcopsylla gallinacea*, BAKER, p. 374, P. U. S. Mus. xxvii.

(E.) HEMIPTERA OR RHYNCHOTA.

The trophi, classification, 2 new suborders, *Sandaliorrhyncha* fossil, *Conorrhyncha* for *Thaumatoxena*, BÖRNER (157).

Conorrhyncha n. suborder for the following :

Thaumatoxena n. g. (?), *T. wasmanni* n. sp., Natal with *Termes natalensis*, BREDDIN & BÖRNER, pp. 84-94, SB. Ges. naturf. Berlin 1904.

Cimex : the type of, KIRKALDY & W. T. B., Nature lxix, pp. 464, 465.

KIRKALDY proposes 77 new generic names, and gives a list of others not included in Scudder or Waterhouse ; Entomologist 1904, pp. 279-283.

New *Paleohemiptera*, Permian, Russia, see HANDLIRSCH, Palæoentomology, p. 125.

Alaska *Heteroptera*, reprint, HEIDEMANN (672).

Effect of stink of *Hemiptera*, CONRADI (306).

Notes on habits and young of 15 species, XAMBEU (1539).

HEMIPTERA-HETEROPTERA.

PENTATOMIDÆ.

[Cf. BERGROTH (102, 105), BREDDIN (165, 167, 168, 169, 171), DISTANT (388, 390), HORVÁTH (715, 717), JAKOVLEFF (754, 755, 757), MARTIN (918), REUTER (1163), SCHOUTEDEN (1235-1239), VAN DUZEE (1430).]

The genera of *Scutellerinæ* with lists of the species, SCHOUTEDEN, Scutellerinæ, Wytsman Gen. Ins. fasc. xxiv, 98 pp., 5 plates.

Annotated list of *Pentatomidæ* of America north of Mexico, and descriptions of 12 spp. n., VAN DUZEE, Tr. Amer. ent. Soc. xxx, pp. 1-80.

Damellera n. n. for *Damelia*, *Montandoneus* n. n. for *Gabonia*, *Atelias* n. n. for *Ætius*, *Texas* n. n. for *Melanostoma*, *Grimgerda* n. n. for *Macrothyreus*, *Menuthias* n. n. for *Ilerda* ; *Bergthora* n. n. for *Cryptoporus*, *Xosa* n. n. for *Anubis*, *Acanthidiellum* n. n. for *Acanthidium*, *Stictocoris* n. n. for *Stictonotus*, *Liodermion* n. n. for *Lioderma*, *Gueriniellus* n. n. for *Platycoris*, *Burma* n. n. for *Paramecus*, *Eupododus* n. n. for *Pododus*, *Ochisme* n. n. for *Trachyops*, *Dolichisme* n. n. for *Petrisia*, KIRKALDY, p. 280, Entomologist 1904.

Acanthosoma cruciata var. n. *cooleyi*, VAN DUZEE, p. 74, Tr. Amer. ent. Soc. xxx.

A. korolkovi, Mantchuria, JAKOVLEFF, Rev. russe Ent. 1904 ; *A. atricornis*, Montreal, VAN DUZEE, p. 75, Tr. Amer. ent. Soc. xxx : n. spp.

Afraniella n. g. near *Afrania*, for *A. lambaremi* n. sp., Congo, SCHOUTEDEN, p. 137, Ann. Soc. ent. Belgique xlviii.

Agonoscelis versicolor var. n. *tibialis*, HORVÁTH, p. 261, table of African *Ag.* p. 262, Ann. Mus. Hungar. ii.

A. cognata, E. Africa, HORVÁTH, p. 260, t. c. n. sp.

Alamprella n. g. near *Geotomus*, *A. singularis* n. sp., Guinea, HORVÁTH, p. 354, t. c.

Anesthia philippina n. n. for *confusa* Br., BREDDIN, p. 10, Wien. ent. Zeit. xxiii.

A. gibba, New Guinea, BREDDIN, p. 10, t. c. n. sp.

- Asaca punctiventris*, Tonkin, BREDDIN, p. 10, t. c. **n. sp.**
Aspavia escaleraei, Cameroons, SCHOUTEDEN, p. 157, Mem. Soc. Espan. i, **n. sp.**
Aspideurus metallicus, Java, BREDDIN, p. 10, Wien. ent. Zeit. xxiii, **n. sp.**
Atelides sumatranus, Sumatra, BREDDIN, p. 18, t. c. **n. sp.**
Aspongopus viduatus, "melon-bug," plate B, p. 43, BALFOUR, 1st Rep. Wellcome Lab.
Basicryptus nigromaculatus, E. Africa, SCHOUTEDEN, p. 141, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Bathycelia nesophila, malachitica, St. Thomé isld., HORVÁTH, p. 268, Ann. Mus. Hungar. ii, **n. spp.**
Bergrothina n. g. Pentat., cameronensis n. sp., W. Africa, SCHOUTEDEN, p. 155, Mem. Soc. espan. i.
Brachyaulax oblonga var. *n. splendens*, SCHOUTEDEN, p. 297, Ann. Soc. ent. Belgique xlviii.
Brachyplatys rubromaculatus, Guinea, SCHOUTEDEN, p. 142, Mem. Soc. espan. i, **n. sp.**
Brachyrhampus haglundii, Cameroons, SCHOUTEDEN, p. 151, t. c. **n. sp.**
Brachystethus coxalis, Peru, Chiriqui, BREDDIN, p. 178, Soc. ent. xviii, **n. sp.**
Brepholoxa n. g. near *Liotropis*, *B. heidemanni n. sp.*, Florida, VAN DUZEE, p. 78, Tr. Amer. ent. Soc. xxx.
Brochymena affinis, California, VAN DUZEE, p. 29, t. c. **n. sp.**
Callidea haglundii, Trop. Africa, p. 42, SCHOUTEDEN, Rhynch. æthiop. **n. sp.**
Calliscyta australis, SCHOUTEDEN, p. 296, Ann. Soc. ent. Belgique xlviii.
Carbula teretipes, Madagascar, HORVÁTH, p. 260, Ann. Mus. Hungar. ii, **n. sp.**
Caura excelsa var. *n. limbata*, HORVÁTH, p. 257, t. c. ; *C. excelsa* = (*insignis* Schout.), SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii.
Chelysoma glirina, Brazil, BERGROTH, p. 354, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Chilocoris assmuthi, p. 407, *solenopsidis*, p. 408, India, myrmecophilous, BREDDIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Chipatula agilis, E. Africa, SCHOUTEDEN, p. 135, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Cocalus assimilis, E. Africa, HORVÁTH, p. 257, Ann. Mus. Hungar. ii, **n. sp.**
Cocorhelia ventralis, Madagascar, HORVÁTH, p. 263, t. c. **n. sp.**
Corimelœna sayi n. n. for *albipennis* Say, VAN DUZEE, p. 10, Tr. Amer. ent. Soc. xxx.
C. gillettii, New Jersey, VAN DUZEE, p. 8, t. c. ; *C. major*, Brazil, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
Dalcantha angularis, Sumatra, p. 18, *alata*, Tonkin, p. 19, BREDDIN, Wien. ent. Zeit. xxiii, **n. spp.**
Dalpada perelegans, Tonkin, BREDDIN, p. 1, t. c. **n. sp.**
Dalsira brunni, Cameroons, SCHOUTEDEN, p. 142, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Dandinus n. g. near *Æschrus*, p. 264, for *D. crassus n. sp.*, N. Queensland, p. 265, DISTANT, Ann. Nat. Hist. xiii.
Deroplax circumducta varr. and synonymy, SCHOUTEDEN, p. 301, Ann. Soc. ent. Belgique xlviii.
Discocephala andina, Ecuador, BREDDIN, p. 58, Soc. ent. xix, **n. sp.**
Dolycoris penicillatus, Turkestan, HORVÁTH, p. 580, Ann. Mus. Hungar. ii, **n. sp.**
Dystus villosus, Bolivia, BREDDIN, p. 153, Soc. ent. xviii, **n. sp.**
Edessa suturata var. *n. subandina*, p. 135, *E. oxyacantha*, p. 138, *quadridens*, p. 140, *infulata*, p. 143, *metata*, p. 145, *meditabunda*, p. 152, sex characters, BREDDIN, SB. Ges. naturf. Berlin 1904.
E. schirmeri, pachyacantha, p. 136, *leptacantha*, p. 139, *brachyacantha*,

- p. 140, *bærneri*, p. 141, *handlirschi*, p. 142, *leprosula*, p. 144, *boopis*, p. 146, *heymonsi*, p. 147, *verhoeffi*, *perscita*, p. 149, *capito*, p. 151, *cogitabunda*, p. 153, S. America, BREDDIN, t. c.; *E. infulata*, Peru, *oxyacantha*, Bolivia, BREDDIN, p. 50, Soc. ent. xix; *E. vernicosa*, *hedulus*, Ecuador, *hirculus*, Bolivia, BREDDIN, t. c. p. 178 : n. sp.
- Elvisura minor*, Trop. Africa, SCHOUTEDEN, Rhynch. æthiop. p. 6, n. sp.
- Empysarus* n. g. *Tesseratominæ*, p. 315, *E. depressus* n. sp., S. India, p. 316, MARTIN, Bull. Mus. Paris 1904.
- Epicoleotichus* subg. n. of *Coleotichus*, SCHOUTEDEN, p. 6, *Scutellerinæ*.
- Euenaria* n. g. near *Ænaria*, *E. jucunda* n. sp., Tonkin, BREDDIN, p. 2, Wien. ent. Zeit. xxiii.
- Eumecopus abdominalis*, p. 263, *pallescentis*, p. 264, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, n. spp.
- Eurinome armata*, N. Guinea, BREDDIN, p. 4, Wien. ent. Zeit. xxiii, n. sp.
- Eurostus heros*, Tonkin, BREDDIN, p. 16, t. c. n. sp.
- Eurygaster carinatus*, Utah, VAN DUZEE, p. 18, Tr. Amer. ent. Soc. xxx, n. sp.
- Eusarcotis gibbosus*, Corea, JAKOVLEFF, p. 23, Rev. Russe Ent. iv; *E. V-flavum*, Madagascar, HORVÁTH, p. 259, Ann. Mus. Hungar. ii : n. spp.
- Eusthenes diomedes*, Tonkin, BREDDIN, p. 15, Wien. ent. Zeit. xxiii, n. sp.
- Exithemus mansonicus*, Tonkin, BREDDIN, p. 6, t. c. n. sp.
- Fokkeria* n. g. *Scutellerides*, *F. crassa* n. sp., N. America, SCHOUTEDEN, p. 301, Ann. Soc. ent. Belgique xlviii.
- Galacicus martini*, Minas Geraes, SCHOUTEDEN, p. 299, t. c.; *G. simplex*, Peru, BREDDIN, p. 49, Soc. ent. xix : n. spp.
- Gastroxys* n. g. near *Diploxys*, p. 257, *G. funerea* n. sp., E. Africa, p. 258, HORVÁTH, Ann. Mus. Hungar. ii.
- Geomorpha junodi*, Transvaal, DISTANT, p. 350, Ann. Nat. Hist. xiii, n. sp.
- Glypsus carinulatus*, Soudan, BERGROTH, p. 32, Rev. Russe Ent. iv; *G. bouvieri*, Congo, p. 140, *kuhlgatzii*, Africa, p. 141, SCHOUTEDEN, Ann. Soc. ent. Belgique xlviii : n. spp.
- Gnathoconus elongatus*, Transvaal, DISTANT, p. 349, Ann. Nat. Hist. xiii, n. sp.
- Gonaulax* n. g. p. 57, *G. bergrothi* n. sp., Usambara, p. 59, pl. i, fig. 8, SCHOUTEDEN, Rhynch. æthiop.
- Gonopsis tonkinensis*, Tonkin, BREDDIN, p. 19, Wien. ent. Zeit. xxiii, n. sp.
- Haullevillea* n. g. near *Amauropepla*, *H. denticulata* n. sp., Trop. Africa, SCHOUTEDEN, p. 126, Rhynch. æthiop.
- Iphiarusa* n. g. near *Hoffmannseggella*, p. 12, *I. aratrix* n. sp., Tonkin, p. 13, BREDDIN, Wien. ent. Zeit. xxiii.
- Irochrotus montandoni*, Senegal, p. 88, SCHOUTEDEN, Rhynch. æthiop.; *I. indicus*, Bengal, SCHOUTEDEN, p. 303, Ann. Soc. ent. Belgique xlviii : n. spp.
- Kayesia* n. g. near *Podops*, *K. parva* n. sp., Soudan, SCHOUTEDEN, p. 114, Rhynch. æthiop.
- Laccophorella* n. g. *Acanthosominæ*, *L. bornemiszæ* n. sp., E. Africa, HORVÁTH, p. 270, Ann. Mus. Hungar. ii.
- Lerida bolivari*, Guinea, SCHOUTEDEN, p. 146, Mem. Soc. espan. i, n. sp.
- Lincus securiger*, *dentiger*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, n. spp.
- Lobopelta* n. g. *Phyllocephalinæ*, p. 142, for *L. funebris* n. sp., Congo, p. 143, SCHOUTEDEN, Ann. Soc. ent. Belgique xlviii.
- Lobothyreus brasiliensis*, Brazil, SCHOUTEDEN, p. 300, t. c. n. sp.
- Macrocytus inermipes*, St. Thomé isld., HORVÁTH, p. 253, Ann. Mus. Hungar. ii, n. sp.
- Malgassus exiguus*, Madagascar, HORVÁTH, p. 269, t. c. n. sp.
- Megadæum*, characters and position, BERGROTH, p. 37, Wien. ent. Zeit. xxiii.
- M. obliquum*, Cameroons, id. p. 39, t. c. n. sp.

- Melanodermus dilutipes*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. sp.**
Miopygium n. g. near *Macropygium*, *M. cyclopeltoides n. sp.*, Rio Grande do Sul, BREDDIN, p. 153, t. c.
Montandoniella n. g. Plataspidinæ, femorata n. sp., Guinea, SCHOUTEDEN, p. 144, Mem. Soc. Espan. i.
Morbora hirtula, Tasmania, *schoutedeni*, Queensland, BERGROTH, p. 356, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Moyara martini, Uganda, SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Nealeria diminuta, Madagascar, HORVÁTH, p. 255, Ann. Mus. Hungar. ii, **n. sp.**
Nezara bergrothi, p. 263, *liturata, valida*, p. 264, Madagascar, *limbosa*, p. 265, *adelpa, macrorhaphis*, p. 266, W. Africa, *rufidorsum*, Madagascar, p. 267, HORVÁTH, t. c. **n. spp.**
Ochrorrhaca n. g. near *Ochrophara*, *O. truncaticornis n. sp.*, Tonkin, BREDDIN, p. 3, Wien. ent. Zeit. xxiii.
Odontoscelis balli, p. 19, *producta*, p. 20, Colorado, VAN DUZEE, Tr. Amer. ent. Soc. xxx, **n. spp.**
Oncinoproctus n. g. near *Eurinome*, *O. griseolus n. sp.*, Sikkim, BREDDIN, p. 5, Wien. ent. Zeit. xxiii.
Oncodochilus cruciatulus, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**
Oplonus cruentus var. *n. inermis*, SCHOUTEDEN, p. 140, Ann. Soc. ent. Belgique xlviii.
O. saga, Bolivia, BREDDIN, p. 49, Soc. ent. xix; *O. severus*, Peru, BREDDIN, p. 177, t. c. **n. spp.**
Palomena limbata, Koukou-noor, JAKOWLEW, p. 71, Horae Soc. ent. Ross. xxxvii, **n. sp.**
Parabolbocoris n. g. Graphosomatinae, P. signoreti n. sp., Bogos, SCHOUTEDEN, p. 106, Rhynch. æthiop.
Paracoleotichus subg. *n. of Coleotichus*, SCHOUTEDEN, p. 6, Scutellerinae.
Parapæcilocoris subg. *n.*, SCHOUTEDEN, p. 21, t. c.
Parochlerus n. g. near *Ochlerus*, *P. latus n. sp.*, Peru, BREDDIN, p. 153, Soc. ent. xviii.
Pentatoma (Rhytidolomia) osborni, Colorado, VAN DUZEE, p. 37, Tr. Amer. ent. Soc. xxx, **n. sp.**
Peribalus tristis, Vancouver, VAN DUZEE, p. 33, t. c. **n. sp.**
Periphymopsis subg. *n.*, SCHOUTEDEN, p. 78, Scutellerinae.
Philia regia=(*leucochalcea* Bredd.) *area*=(*compacta* Bredd.), DISTANT, p. 276, Ann. Nat. Hist. xiii; *P. jactator*=(*fenestrata* Bredd.), DISTANT, p. 66, op. cit. xiv.
P. insignis, N. S. Wales, SCHOUTEDEN, p. 297, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Phimodera, the variation and synonymy, *P. humeralis* var. *n. dalmanni*, p. 6, REUTER, Ofv. Finska Forh. xlv, No. 17, 15 pp.
P. corrugata, Colorado, VAN DUZEE, p. 16, Tr. Amer. ent. Soc. xxx, **n. sp.**
Phlæa, its mimicry, PÉREZ, p. 429, C.R. Soc. Biol. lvi.
Platynopus fallax, horvathi, Africa, SCHOUTEDEN, p. 139, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Plisthenes buruensis, Buru, BREDDIN, p. 179, Wien. ent. Zeit. xxiii, **n. sp.**
Podisus cynicus, bracteatus, distinctions, sex characters, HEIDEMANN, pp. 9, 10, cuts, P. ent. Soc. Washington vi.
P. blanditor, Peru, BREDDIN, p. 46, Soc. ent. xix; *P. carbonarius*, Centr. America, *neniator, carnifex*, S. America, BREDDIN, p. 154, t. c. : **n. spp.**
Podops parvulus, N. America, VAN DUZEE, p. 22, Tr. Amer. ent. Soc. xxx, **n. sp.**
Polytes insignis, Bolivia, SCHOUTEDEN, p. 298, Ann. Soc. ent. Belgique xlviii; *P. cingulicornis*, Brazil, BERGROTH, p. 354, Ann. Soc. ent.

- Belgique xlviij; *P. onca*, *griseus*, Peru, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
- Ponsila escalerai*, Guinea, SCHOUTEDEN, p. 142, Mem. Soc. Espan. i, **n. sp.**
- Prionocompastes vicarians*, Java, BREDDIN, p. 14, Wien. ent. Zeit. xxiii, **n. sp.**
- Rhynchocoris patulus*, Java, BREDDIN, p. 12, t. c. **n. sp.**
- Runibia picturata*, Peru, BREDDIN, p. 177, Soc. ent. xviii, **n. sp.**
- Sabæus rectispinus*, Java, p. 8, *teretispinus*, Sumbawa, *fortispinus*, Buru ?, p. 9, BREDDIN, Wien. ent. Zeit. xxiii, **n. spp.**
- Scotinophara curvispina*, p. 123, E. Africa, *madagascariensis*, Madagascar, p. 125, SCHOUTEDEN, Rhynch. æthiop. **n. spp.**
- Sepidiocoris* **n. g.** p. 127, *Graphosomatinae*, *S. noralhierii* **n. sp.**, W. Africa, p. 128, SCHOUTEDEN, t. c.
- Severinina* **n. g.** near *Melanophara*, p. 116, *S. bergrothi* **n. sp.**, Congo, pl. ii, fig. 10, p. 117, SCHOUTEDEN, Rhynch. æthiop.; *Severinina* and allies, characters amended, SCHOUTEDEN, p. 135, Ann. Soc. ent. Belgique xlviij.
- Sibaria andicola*, Ecuador, BREDDIN, p. 49, Soc. ent. xix, **n. sp.**
- Stenozygum bergrothi* **n. n.** for *bicolor* Sch., SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviij.
- S. mombasanum*, E. Africa, SCHOUTEDEN, p. 137, t. c.; *S. varelai*, Cameroons, SCHOUTEDEN, p. 158, Mem. Soc. Espan. i : **n. spp.**
- Supputius obscurus*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. sp.**
- Symphylus enac*, Bolivia, BREDDIN, p. 49, op. cit. xix, **n. sp.**
- Tarisa chloris*, Turkestan, HORVÁTH, p. 580, Ann. Mus. Hungar. ii, **n. sp.**
- Tectocoris lineola*, habits, stages, eggs, DODD, pp. 483–485, Tr. ent. Soc. London 1904.
- Tesseratoma niamensis*, Africa, SCHOUTEDEN, p. 143, Ann. Soc. ent. Belgique xlviij, **n. sp.**
- Tetrochlerus* **n. g.** near *Ochlerus*, *T. fissiceps* **n. sp.**, Ecuador, BREDDIN, p. 153, Soc. Ent. xviii.
- Theseus nigrescens*, N. Queensland, DISTANT, p. 263, Ann. Nat. Hist. xiii, **n. sp.**
- Thyanta punctiventris*, p. 55, *brevis*, p. 56, Colorado, VAN DUZEE, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Tolumnia ferruginescens*, Tonkin, BREDDIN, p. 7, Wien. ent. Zeit. xxiii, **n. sp.**
- Triplatyr* **n. g.** near *Eurus*, p. 255, *T. quadraticeps* **n. sp.**, Madagascar, p. 256, HORVÁTH, Ann. Mus. Hungar. ii.
- Vanduzeeina* **n. g.** *Odontoscelis balli*, SCHOUTEDEN, p. 85, Scutellerinæ.
- Xerobia stali*, Somaliland, p. 87, SCHOUTEDEN, Rhynch. æthiop. **n. sp.**

COREIDÆ.

[Cf. BREDDIN (166, 171), DISTANT (388–391), GIARD (597), JAKOVLEFF (754, 755), OSBORN (1001).]

- Althos* **n. n.** for *Margus*, *Nanichisme* **n. n.** for *Nesiotes*, *Dersagrena* **n. n.** for *Dalcera*, *Elatisme* **n. n.** for *Elathea*, *Ouranion* **n. n.** for *Bardistus*, *Marichisme* **n. n.** for *Phidippus*, *Hæckelia* **n. n.** for *Microphyllia*, KIRKALDY, p. 280, Entomologist 1904.
- Oviposition of *Pseudophlæus* and *Phyllomorpha*, GIARD, p. 107, Feuille Natural. xxxiv.
- Acanthocephala declivis* var. *n. guianensis*, OSBORN, p. 198, Ohio Natural. v.
- Anasa tristis*, copula eggs, parasite, GIRAULT, Ent. News Philad. xv, p. 335.
- A. jucunda*, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**
- Carlisis serrabilis*, Transvaal, DISTANT, p. 350, Ann. Nat. Hist. xiii, **n. sp.**
- Coriomeris validicornis*, Transcaucasus, p. 293, *integerrimus*, Nan-shan, p. 294, JAKOVLEFF, Rev. Russe Ent. 1904, **n. spp.**

- Holymenia tibialis, rubiginosa*, S. America, BREDDIN, p. 147, Soc. ent. xviii, **n. spp.**
Hyalymenus (Tivarbus) calcarator, Bolivia, BREDDIN, t. c. p. 148, **n. sp.**
Hypselonotus fuscus, Bolivia, OSBORN, p. 199, Ohio Natural. v, **n. sp.**
Kennetus n. g. Mictaria, p. 303, for *K. alces n. sp.*, Borneo, p. 304, DISTANT, Ann. Nat. Hist. xiii.
Lycambes sargi, Guatemala, BREDDIN, p. 306, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Mercennus n. n. for *Melania* Dist., DISTANT, p. 304, Ann. Nat. Hist. xiii.
Mictis loricata, Congo, DISTANT, p. 61, op. cit. xiv, **n. sp.**
Mirperus nigrofasciatus, robustus, Transvaal, DISTANT, p. 352, op. cit. xiii, **n. spp.**
Myrmus formosus, Baikal, JAKOVLEV, p. 93, Rev. Russe Ent. iv, **n. sp.**
Nematopus nigriventris, Ecuador, *rufipes*, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. spp.**
Plinachtus trilineatus, Transvaal, DISTANT, p. 351, Ann. Nat. Hist. xiii, **n. sp.**
Pomponatus n. g. near *Chærommatus*, p. 265, for *P. typicus n. sp.*, N. Queensland, p. 266, DISTANT, t. c.
Trachelium mimeticum, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**

LYGÆIDÆ and PYRRHOCORIDÆ.

- [Cf. BREDDIN (170, 171), DISTANT (386, 388, 390), HORVÁTH (714, 717), JAKOVLEFF (754, 756), OSBORN (1001), UHLER (1416).]
Antilocoris n. n. for *Pygæus*, *Botocudo n. n.* for *Salacia*, *Probergrothius n. n.* for *Odontopus*, *Peggichisme n. n.* for *Davila*, *Polychisme n. n.* for *Imbrius*, KIRKALDY, p. 280, Entomologist 1904.
Acroleucus eros, pothux, Ecuador, BREDDIN, p. 148, Soc. ent. xviii, **n. spp.**
Anorygma subg. n. cf. Phenacantha.
Aphanus atomarius, Transvaal, DISTANT, p. 353, Ann. Nat. Hist. xiii, **n. sp.**
Brachyphyma n. g. p. 144, *B. argutum, ochraceum*, p. 145, *papuense*, p. 146, **n. spp.**, New Guinea, HORVÁTH, Ann. Mus. Hungar. ii.
Calliseidus n. g. p. 153, *C. nigricollis n. sp.*, Peru, p. 154, HORVÁTH, t. c.
Chauliops rutherfordi, Old Calabar, DISTANT, p. 277, Entomologist 1904, **n. sp.**
Colobasiastes, insertion of antennæ, p. 245, cut, BREDDIN, Wien. ent. Zeit. xxiii.
C. similis, p. 162, *longicornis*, p. 163, *obscurus*, p. 166, *rufiventris*, p. 167, Peru, HORVÁTH, Ann. Mus. Hungar. ii; *C. analis*, Bolivia, BREDDIN, p. 249, Wien. ent. Zeit. xxiii : **n. spp.**
Colobathristinæ, monograph, HORVÁTH, pp. 117–172, Ann. Mus. Hungar. ii.
Colobathristes egregius, Brazil, *facetus*, hab.?, HORVÁTH, p. 151, t. c. **n. spp.**
Diascopeu n. g. p. 154, *D. discessa*, p. 155, *debilis*, p. 156, **n. spp.**, Peru, HORVÁTH, t. c.
Dieuches scutellatus, consanguineus, N. Queensland, DISTANT, p. 268, Ann. Nat. Hist. xiii, **n. spp.**
Emblethis brevicornis, Turkestan, HORVÁTH, p. 582, Ann. Mus. Hungar. ii; *E. luridus*, E. Turkestan, JAKOVLEFF, p. 24, Rev. Russe Ent. iv : **n. spp.**
Fontejanus wasmänni, amplified description, BREDDIN, pp. 410–412, cut, Ann. Soc. ent. Belgique xlviii.
Geocoris (Piocoris) chinensis, Sé-tschuen, JAKOVLEV, p. 170, t. c.; *G. elongatulus*, N. Queensland, DISTANT, p. 267, Ann. Nat. Hist. xiii : **n. spp.**
Germalus lineolosus, N. Queensland, DISTANT, p. 266, t. c. **n. sp.**
Lygæus sulcatus, Guiana, OSBORN, p. 200, Ohio Natural. v, **n. sp.**

- Microtoma præusta*, Alai, JAKOVLEFF, p. 23, Rev. Russe Ent. iv, n. sp.
Narcegaster n. g. for *Colobathristes geniculatus* St., HORVÁTH, p. 141, Ann. Mus. Hungar. ii.
Nysius pilosulus, Turkestan, HORVÁTH, p. 581, t. c.; *N. rubromaculatus*, Transvaal, DISTANT, p. 352, Ann. Nat. Hist. xiii : n. spp.
Oxycaenus scabrosus, New Mexico, UHLER, p. 353, P. U. S. Mus. xxvii, n. sp.
Pamera picturata, p. 267, *apicalis*, p. 268, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, n. spp.
Peruda longiventris, Peru, HORVÁTH, p. 170, Ann. Mus. Hungar. ii, n. sp.
Physopelta melanoptera, W. Africa, DISTANT, p. 61, Ann. Nat. Hist. xiv, n. sp.
Piptocentrus n. g. p. 157, *P. pilipes* n. sp., Peru, p. 158, HORVÁTH, Ann. Mus. Hungar. ii.
Phænacantha n. g. p. 120, *P. biroii*, p. 124, *suturalis*, p. 125, *consobrina*, *ambigua*, p. 126, *femoratis*, p. 127, *unicolor*, *conviva*, p. 128, *mehelyi*, p. 129, New Guinea, *sedula* with var. *melanoscelis*, p. 130, *gestroi*, Sumatra, *strenua*, p. 131, *antennalis*, p. 132, *pilosella*, p. 133, *discrepans*, p. 134, New Guinea, *confusa*, Philippines, p. 135, *pacifica*, Fiji, p. 136, *P. (Anorygma* subg. n., p. 137) *solers*, Burma, *viridipennis*, Tenasserim, p. 139, n. spp., HORVÁTH, t. c.
Rhyparochromus compactus, New Mexico, UHLER, p. 354, P. U. S. Mus. xxvii, n. sp.
Symphylax n. g. p. 142, *S. picticollis* n. sp., with varr. *blandus*, *confluens*, Sumatra, etc., p. 143, HORVÁTH, Ann. Mus. Hungar. ii.
Tagalisca subg. n. of *Phænacantha*, for *Colobathristes pallidus* St., HORVÁTH, p. 140, t. c.
Taphrocranium n. g. for *Colobathristes robustus* Bredd., HORVÁTH, p. 147, t. c.
Trichocentrus n. g. p. 152, *T. gibbosus* n. sp., Brazil, p. 153, HORVÁTH, t. c.

TINGIDÆ.

- Corythuca marmorata*, life-history, FELT, pp. 125-129, pls. iii, iv, Bull. N. York Mus. lxxvi.
Phyllochisme n. n. for *Physatochila* L. & S., *Mæcenus* n. n. for *Tingis*, *Gelchossa* n. n. for *Leptostyla*, KIRKALDY, p. 280, Entomologist 1904.

ARADIDÆ and PHYMATIDÆ.

[Cf. DISTANT (386), HEIDEMANN (670, 671).]

- Aneurus fiskei*, N. Carolina, HEIDEMANN, p. 164, P. ent. Soc. Washington vi, n. sp.
Aradus uniformis, p. 231, *hubbardi*, p. 232, N. America, HEIDEMANN, t. c. n. spp.
Neuroctenus hopkinsi, North Carolina, HEIDEMANN, p. 163, t. c. n. sp.
Proxius schwarzi, Florida, HEIDEMANN, p. 230, t. c. n. sp.
Glossopelta dudgeoni, Kangra, DISTANT, p. 277, Entomologist 1904, n. sp.

HYDROMETRIDÆ.

- Gerris thoracicus* var. n. *rapidus*, HORVÁTH, p. 582, Ann. Mus. Hungar. ii.
Metrocoris, table of species, KIRKALDY, p. 61, Entomologist 1904.
M. distantii, Zoutpansberg, id. p. 62, t. c. n. sp.
Velia brunnea, Bolivia, OSBORN, p. 204, Ohio Natural. v, n. sp.

REDUVIIDÆ.

[Cf. BERGROTH (103), BREDDIN (167, 171), DISTANT (383, 388, 390), HORVÁTH (717), JAKOVLEFF (754), NOUALHIER (984), OSBORN (1001), VARELA (1431, 1432).]

Westermannias n. n. for *Westermannia*, *Isachisme* n. n. for *Algol*, *Peregrinator* n. n. for *Microleptes*, *Mestor* n. n. for *Lamus*, *Brontostoma* n. n. for *Mindarus*, KIRKALDY, p. 280, Entomologist 1904.

BREDDIN notes various forms of larval *Reduviidæ*, found in the nests of Termites and Ants in India and Africa, Ann. Soc. ent. Belgique xlviii, pp. 412–416.

Acanthaspis (*Plynus*) *breddini*, Cameroons, VARELA, p. 55, Bol. Soc. espan. iv ; *A. sericata*, p. 258, *porrecta*, p. 261, Ceylon, *zebraica*, Burma, p. 264, *siva*, p. 265, *rama*, p. 268, India, DISTANT, Faun. Brit. India Rhynchota ii ; *A. variivenis*, Siam, NOUALHIER, p. 174, pl. x, fig. 1, Mission Pavie iii : n. spp.

Alcmena straminipes, *maculosa*, India, DISTANT, p. 370, Faun. Brit. India Rhynchota ii, n. spp.

Alloerhynchus bengalensis, India, DISTANT, p. 394, t. c. n. sp.

Apiomerus lobulatus, Ecuador, BREDDIN, p. 148, Soc. ent. xviii, n. sp.

Arcesius fuscus, Burma, DISTANT, p. 351, Faun. Brit. India Rhynchota ii, n. sp.

Audernacus n. g. for *Santosia atropictus* Dist. and *A. andamanensis* n. sp., Andamans, DISTANT, p. 306, t. c.

Bayerus n. g. near *Santosia*, *B. cuneatus* n. sp., Assam, DISTANT, p. 307, t. c.

Bartacus n. g. near *Epidaus* for *Cimex spinifex* Thunb., DISTANT, p. 374, t. c.

Brassivola n. g. near *Epidaus*, p. 373, *B. hystrix* n. sp., Ceylon, p. 374, DISTANT, t. c.

Castolus (*Spinda*) *nigriventris*, Bolivia, BREDDIN, p. 148, Soc. ent. xviii, n. sp.

Centrocnemis dearmata, Ceylon, DISTANT, Faun. Brit. India Rhynchota ii, n. sp.

Cleptria escaleraei, Guinea, VARELA, p. 134, Mem. Soc. Espan. i, n. sp.

Conorrhinus megistus, attacks on man, POULTON, p. lxxvi, P. ent. Soc. London 1904.

Coranus mongolicus, E. Mongolia, JAKOVLEFF, p. 26, Rev. Russe Ent. iv, n. sp.

Croscius melanopterus = (*Castrucci* *insignis* Dist.), DISTANT, p. 276, Ann. Nat. Hist. xiii.

Dithmarus n. g. *Stenopodinae*, p. 353, for *D. atromaculatus* n. sp., Transvaal, p. 354, DISTANT, t. c.

Dodonæus n. g. near *Nabis*, p. 398, *D. humeralis* n. sp., Sikhim, p. 399, DISTANT, Faun. Brit. India Rhynchota ii.

Durganda fulvescens, Tenasserim, DISTANT, p. 283, t. c. n. sp.

Ectomocoris erebus, Burma, p. 292, *tibialis*, p. 293, *vishnu*, p. 296, India, DISTANT, t. c.

Edocla pelia, Pegu, DISTANT, p. 275, t. c. n. sp.

Elaphocranus n. g. *Petalochirinae*, p. 357, *tarandus* n. sp., Cameroons, p. 358, BERGROTH, Bol. Soc. espan. iv.

Endochus cinnamopterus, *straminipes*, Transvaal, DISTANT, p. 355, Ann. Nat. Hist. xiii ; *E. atricapillus*, *umbrinus*, India, DISTANT, p. 367, Faun. Brit. India Rhynchota ii : n. spp.

Epidaus atrispinus, Sikhim, *parvus*, Burma, DISTANT, p. 372, t. c. n. spp.

Eriximachus n. g. near *Physorhynchus*, p. 323, *E. globosus* n. sp., India p. 324, DISTANT, t. c.

- Euvonymus* n. g. *Acanthaspidinæ*, p. 244, *E. spiniceps* n. sp., Ceylon, p. 245, DISTANT, t. c.
- Godefridus* n. g. *Apiomerinæ*, p. 328, *G. alienus* n. sp., Burma, p. 329, DISTANT, t. c.
- Harpactor geniculatus*, Transcaucasus, JAKOVLEV, p. 94, Rev. Russe Ent. iv; *H. femoralis*, Transvaal, DISTANT, p. 355, Ann. Nat. Hist. xiii; *H. squalus*, Sikhim, DISTANT, p. 333, Faun. Brit. India Rhynchota ii, n. spp.
- Harpagocoris perspectans* varr. = (*bergrothi* and *affinis*), BERGROTH, p. 361, Bol. Soc. espan. iv.
- H. bergrothi*, p. 136, *affinis*, p. 137, *merceti*, *suspectus*, p. 138, W. Africa, VARELA, Mem. Soc. Espan. i, n. spp.
- Havithus trochanterus*, N. Queensland, DISTANT, p. 269, Ann. Nat. Hist. xiii, n. sp.
- Henricohahnia gallus*, Nilgiri hills, DISTANT, p. 389, Faun. Brit. India Rhynchota ii, n. sp.
- Heteropinus discretus*, Guinea, VARELA, p. 131, Mem. Soc. Espan. i, n. sp.; characters, BERGROTH, op. cit. iv, p. 362.
- Libavius* n. g. near *Mendis*, *L. greeni* n. sp., Ceylon, DISTANT, p. 313, Faun. Brit. India Rhynchota ii.
- Linshcosteus* n. g. near *Conorhinus*, *L. carnifex* n. sp., N. India, DISTANT, p. 287, t. c.
- Lisarda varelae*, Cameroons, BERGROTH, p. 360, Bol. Soc. espan. iv, n. sp.
- Lorichius* n. g. near *Nabis*, *L. umbonatus* n. sp., Ceylon, DISTANT, p. 402, Faun. Brit. India Reduv. ii.
- Marbodius* n. g. *Epiroderaria*, *M. exemplificatus* n. sp., Ceylon, DISTANT, p. 248, t. c.
- Mastigonomus bolivari*, Guinea, VARELA, p. 136, Mem. Soc. Espan. i, n. sp.
- Nabis cinerascens*, Turkestan, HORVÁTH, p. 582, Ann. Mus. Hungar. ii; *N. tibialis*, Ceylon, p. 400, *funebri*, *nigrescens*, p. 401, India, DISTANT, Faun. Brit. India Rhynchota ii: n. spp.
- Odontogonus* n. n. for *Laphytes* Stål nec Reich., BERGROTH, p. 361, Bol. Soc. espan. iv.
- Phasmatocoris* n. g. *Emesiini*, *P. spectrum* n. sp., Bolivia, BREDDIN, p. 148, Soc. ent. xviii.
- Phonergates (Clopophora) nuptura*, Cameroons, VARELA, p. 55, Bol. Soc. espan. iv, n. sp.
- Phonoctonus elegans*, Cameroons, VARELA, p. 56, t. c. n. sp.
- Phonolibes bimaculatus*, Transvaal, DISTANT, p. 354, Ann. Nat. Hist. xiii, n. sp.
- Physorhynchus pedestris*, p. 320, *malabaricus*, *talpus*, p. 321, *insignis*, *rubromaculatus*, p. 322, India, DISTANT, Faun. Brit. India Rhynchota ii, n. spp.
- Prostemma siamense*, Siam, NOUALHIER, p. 176, pl. x, fig. 2, Mission Pavie iii, n. sp.
- Quercetanus* n. g. near *Scadra*, p. 310, *Q. atromaculatus*, India, *relatus*, Ceylon, n. spp., p. 311, DISTANT, Faun. Brit. India Rhynchota ii.
- Reduvius transnominalis* n. n. for *debilis* Reut., DISTANT, p. 251, t. c.
- R. knyvetti*, p. 251, *esau*, *boyeti*, p. 252, *angiportus*, p. 253, India, DISTANT, t. c. n. spp.
- Rhaphidosoma tuberculatum*, Baluchistan, DISTANT, t. c. p. 330, n. sp.
- Rulandus* n. g. *Nabinae*, *R. phædrus* n. sp., Burma, DISTANT, p. 396, t. c.
- Santusia finitima*, Cameroons, VARELA, p. 133, Mem. Soc. Espan. i, n. sp.
- Scadra tibialis*, *scutellaris*, Assam, DISTANT, p. 309, Faun. Brit. India Rhynchota ii, n. spp.
- Seridentus* n. g. near *Shaumannia*, *S. denticulatus* n. sp., Bolivia, OSBORN, p. 203, Ohio Natural. v.

- Sminthocoris* n. n. for *Smithus* Stål, DISTANT, p. 279, Faun. Brit. India Rhynchota ii.
Sphedanolestes dives, variabilis, India, DISTANT, p. 342, t. c. n. sp.
Stegius n. g. near *Physorhynchus*, p. 322, *S. pravus* n. sp., Bengal, p. 323, DISTANT, t. c.
Sycanus inermis, Assam, *atrocyaneus*, Burma, DISTANT, p. 356, t. c. n. spp.
Tragelaphodes n. g. *Petulochirinae*, p. 358, *hirculus* n. sp., Cameroons, p. 360, BERGROTH, Bol. Soc. espan. iv.
Villanovanus n. g. for *Endochus dichrous*, DISTANT, p. 364, Faun. Brit. India Rhynchota ii.

ANTHOCORIDÆ, CERATOCOMBIDÆ, HENICOCEPHALIDÆ,
 POLYCTENIDÆ.

Synonymy of Walker's *Anthocoridae*, DISTANT, p. 222, Ann. Nat. Hist. xiv.

- Amphiareus* n. g. for *Xylocoris fulvescens* Walk., DISTANT, p. 220, t. c.
Arnulphus n. g. for *A. aterrimus* n. sp., Burma, DISTANT, p. 220, t. c.
Ceratocombus niger, p. 361, *latipennis*, p. 362, New Mexico, UHLER, P. U. S. Mus. xxvii, n. spp.
Crescentius n. g. *Ceratocombinae*, p. 408, *C. principatus* n. sp., Burma, p. 409, DISTANT, Faun. Brit. India Rhynchota ii.
Henicocephalus pugnatorius, Cape Colony, DISTANT, p. 278, Entomologist 1904, n. sp.
Lippomanus n. g. *Anthocoridae* for *L. hirsutus* n. sp., Burma, DISTANT, p. 221, Ann. Nat. Hist. xiv.
Ostorodias n. g. *Anthocoridae* for *O. contubernalis* n. sp., Himalaya, DISTANT, p. 219, t. c.
Phthirocoris n. g. *Henicocephalidae*, p. 786, for *P. antarcticus* n. sp., Crozet Islands, p. 787, ENDERLEIN, Zool. Anz. xxvii.
Polyctenes intermedius, Egypt, SPEISER, p. 373, pl. xx, Zool. Jahrb. Suppl. vii, n. sp.
Sesellius n. g. *Anthocoridae* for *Anthocoris parallelus* Motsch., DISTANT, p. 221, Ann. Nat. Hist. xiv.
Sphigmocephalus n. g. for *Henicocephalus curculio* Karsch., ENDERLEIN, p. 783, Zool. Anz. xxvii.

CAPSIDÆ.

[Cf. DISTANT (383, 387, 388, 391), HORVÁTH (717), JAKOVLEFF (754), KIRKALDY (809), REUTER (1162-1169), UHLER (1416).]

Metriorrhynchomiris n. n. for *Metriorrhynchus*, *Zanchisme* n. n. for *Schizonotus*, *Kalanía* n. n. for *Baracus*, *Bertsá* n. n. for *Berta*, *Reuterista* n. n. for *Brachybasis*, *Ragnar* n. n. for *Melanocoris*, *Poronotellus* n. n. for *Poronotus*, KIRKALDY, p. 280, Entomologist 1904.

DISTANT gives synonymy and summary of Walker's *Capsidae*; for details refer to the memoir, Ann. Nat. Hist. xiii, pp. 204-206 etc.

- Actinonotus pulcher* varr., REUTER, p. 3, Ofv. Finska Forh. xlv, No. 14.
Adelphocoris funebris, Corea, REUTER, p. 34, Rev. Russe Ent. iv; *A. funestus*, Mou-Pin, p. 7, *fasciaticollis*, p. 8, *melanocephalus*, p. 9, Pekin, REUTER, Ofv. Finska Forh. xlv, No. 16 : n. spp.
Agraptocoris n. g. p. 6, *concolor* n. sp., p. 7, Mongolia, REUTER, op. cit. xlv, No. 4.
Æolocoris n. g. near *Acrorrhinius*, *Æ. alboconsersus* n. sp., Obock, pl. i, fig. 5, p. 17, REUTER, op. cit. xlv, No. 6.

- Allæonycha* n. g. near *Acrotelus*, p. 8, *mayri* n. sp., Wiesbaden, p. 9, REUTER, op. cit. xlv, No. 14.
- Allæotomus chinensis*, Pekin, REUTER, p. 20, op. cit. xlv, No. 16, n. sp.
- Anapus flavicornis*, Borjom, REUTER, p. 5, op. cit. xlv, No. 14; *A. pectoralis*, Turkestan, HORVÁTH, p. 584, Ann. Mus. Hungar. ii : n. spp.
- Angerianus* n. g. *Cylaparia*, p. 437, *A. fractus*, *maurus* n. spp., Tenasserim, p. 438, DISTANT, Faun. Brit. India Rhynchota ii.
- Annona smithi* (= *labeculata* Uhl. nec Dist.), Grenada, *antilleana* (= *Mala decoloris* Uhl.), St. Vincent, DISTANT, p. 62, Ann. Nat. Hist. xiv, n. spp.
- Araspus* n. g. *Bryocoraria* for *Lopus partilus* Walk., DISTANT, p. 112, op. cit. xiii.
- Arculanus* n. g. near *Disphinctus*, for *A. marshalli* n. sp., Mashonaland, DISTANT, p. 198, t. c.
- Argenis* n. g. *Cylaparia*, for *Capsus incisuratus* Walk., DISTANT, p. 107, t. c.
- A. alboviridescens*, Ceylon, DISTANT, p. 435, Faun. Brit. India Rhynchota ii, n. sp.
- Armachanus* n. g. *Cyllocoraria*, p. 478, *A. monoceros* n. sp., Ceylon, p. 479, DISTANT, t. c.; *A. spicatus*, N. W. Australia, DISTANT, p. 203, Ann. Nat. Hist. xiii, n. sp.
- Atomophora oculata*, p. 10, *maculosa*, p. 12, *suturalis*, p. 13, *albovittata*, p. 14, Transcaspien, REUTER, Ofv. Finska Forh. xlv, No. 4, n. spp.
- Atractotomus brevicornis* ♂, REUTER, p. 17, t. c. No. 14.
- Bothriomiris testaceus*, Burma, DISTANT, p. 470, Faun. Brit. India Rhynchota ii, n. sp.
- Calliceratides* n. g. for *Capsus rama* Kirby, DISTANT, p. 417, t. c.
- Calocoris hispanicus* var. n. *bisignata*, *C. sexguttatus* var. n. *reducta*, REUTER, p. 2, Ofv. Finska Forh. xlv, No. 14.
- C. doherityi*, Tenasserim, DISTANT, p. 452, Faun. Brit. India Rhynchota ii, n. sp.
- Camponotidea saundersi* var., REUTER, p. 4, Ofv. Finska Forh. xlv, No. 14.
- Camptobrochis tibialis*, Erythrea, REUTER, p. 12, op. cit. xlv, No. 6; *C. oculatus*, Congo, REUTER, p. 3, op. cit. xlv, No. 10; *C. esau*, p. 201, *capensis*, p. 202, S. Africa, DISTANT, Ann. Nat. Hist. xiii; *C. orientalis*, p. 460, *tutulentus*, *uniformis*, *similis*, p. 461, Brit. India, DISTANT, Faun. Brit. India Rhynchota ii; *C. signatus*, N. Queensland, DISTANT, p. 274, Ann. Nat. Hist. xiii; *C. brevis*, New Mexico, UHLER, p. 359, P. U. S. Mus. xxvii : n. spp.
- Campylognathus fulvus*, Crete, REUTER, p. 18, Ofv. Finska Forh. p. 18, n. sp.
- Campylotropis* n. g. near *Cyllocoris*, p. 35, for *C. jakolevi* n. sp., Corea, p. 36, REUTER, Rev. Russe Ent. iv.
- Capellanus* n. g. *Phytocoraria* Walk., for *Lygus sparsus* Dist., DISTANT, p. 109, Ann. Nat. Hist. xiii.
- Capsus croesus*, *remus*, p. 468, *darsi*, Burma, *pegasus*, Ceylon, p. 469, DISTANT, Faun. Brit. India Rhynchota ii, n. spp.
- Chamus* n. g. *Cylaparia* for *C. wealei*, Cape Colony, n. sp., DISTANT, p. 197, Ann. Nat. Hist. xiii.
- Charagochilus nigricornis*, Congo, REUTER, p. 2, Ofv. Finska Forh. xlv, No. 10; *C. duplicatus*, Pekin, REUTER, p. 16, op. cit. xlv, No. 16 : n. spp.
- Charitocoris* n. g. near *Calocoris*, p. 10, *C. pallidus* n. sp., Persia, p. 11, REUTER, Annuaire Mus. St. Petersb. ix.
- Chlorosomella* n. g. near *Actorrhinus*, p. 6, *geniculata* n. sp., Congo, p. 7, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Clapmarius* n. g. *Herdoniaria*, p. 419, *C. turgidus* n. sp., Ceylon, p. 420, DISTANT, Faun. Brit. India Rhynchota ii.
- Clivinema rubida*, New Mexico, UHLER, p. 355, P. U. S. Mus. xxvii, n. sp.
- Combalus* n. g. *Miraria*, *C. novitius* n. sp., Assam, DISTANT, p. 431, Faun. Brit. India Rhynchota ii.

- Cyphodema* ? *junodi*, Transvaal, DISTANT, p. 201, Ann. Nat. Hist. xiii, n. sp.
Cyphodemidea n. g. near *Cyphodema*, p. 17, *C. variegata* n. sp., Mou-Pin, pl. ii, fig. 5, p. 19, REUTER, Ofv. Finska Forh. xlv, No. 16.
Cyrtorrhinus chinensis Stål, REUTER, p. 22, t. c.
Dagbertus n. g. near *Episcopus* for *Capsus darwini* etc., DISTANT, p. 203, Ann. Nat. Hist. xiii.
Deræocorsis rutilus var. n. *fasciata*, *D. scutellaris* var. n. *ventralis*, REUTER, p. 5, Ofv. Finska Forh. xlv, No. 14.
D. variabilis, rufus, ornandus, India, DISTANT, p. 467, Faun. Brit. India Rhynchota ii, n. spp.
Dichrooscytus consobrinus, Turkestan, HORVÁTH, p. 583, Ann. Mus. Hungar. ii; *D. elegans*, New Mexico, UHLER, p. 356, P. U. S. Mus. xxvii : n. spp.
Diognetus n. g. *Miraria*, p. 431, *D. intonsus* n. sp., Ceylon, p. 432, DISTANT, Faun. Brit. India Rhynchota ii.
Disphinctus elegans, Tenasserim, DISTANT, p. 445, t. c. n. sp.
Estuidus n. g. near *Malalasta*, p. 272, for *E. foveatus, marginatus* n. spp., N. Queensland, p. 273, DISTANT, Ann. Nat. Hist. xiii.
Eucercoris suspectus, N. Queensland, DISTANT, p. 271, t. c. n. sp.
Eucyrtus parvulus, Djibouti, REUTER, p. 5, pl. i, fig. 2, Ofv. Finska Forh. xlv, No. 6, n. sp.
Felisacus n. n. for *Liocoris* Motsch. p. 438, *F. magnificus* n. sp., Tenasserim, p. 439, DISTANT, Faun. Brit. India Rhynchota ii.
Fingulus n. g. near *Physetonotus*, for *F. atrocæruleus* n. sp., N. Queensland, DISTANT, Ann. Nat. Hist. xiii, p. 275.
Fulgentius n. g. *Herdonaria*, p. 103, for *F. mandarinus* n. sp., China, p. 104, DISTANT, t. c.
Gallobelicus n. g. *Cyllocoraria*, p. 477, *G. crassicornis* n. sp., India, p. 478, DISTANT, Faun. Brit. India Rhynchota ii.
Gismunda n. g. near *Liocoris*, *G. chelonina* n. sp., Sikhim, DISTANT, p. 463, t. c.
Glaphyrocoris n. g. near *Læmocoris*, p. 15, *G. unifasciatus* n. sp., Djibouti, pl. i, fig. 4, p. 16, REUTER, Ofv. Finska Forh. xlv, No. 6.
Globiceps parvulus, Spain, REUTER, p. 51, Ent. Mag. xl, n. sp.
Glossopeltis n. g. near *Pilophorus*, p. 13, *G. coutierei*, Obock, n. sp., pl. i, fig. 3, p. 14, REUTER, Ofv. Finska Forh. xlv, No. 6.
Guisardus n. g. *Cylaparia*, *G. pellucidus* n. sp., Tenasserim, DISTANT, p. 436, Faun. Brit. India Rhynchota ii.
Halticus intermedius, New Mexico, UHLER, p. 360, P. U. S. Mus. xxvii; *H. chrysoplepis*, Honolulu, KIRKALDY, p. 179, Entomologist 1904 : n. spp.
Harpedona n. g. *Herdonaria*, p. 418, *H. marginata* n. sp., Ceylon, p. 419, DISTANT, Faun. Brit. India Rhynchota ii.
Helopeltis oryx, Ceylon, DISTANT, p. 441, t. c. n. sp.
Hermotinus n. g. near *Camptobrochis*, *H. signatus* n. sp., Tenasserim, DISTANT, p. 462, t. c.
Hilia n. g. near *Halticus*, *H. fracta* n. sp., Ceylon, DISTANT, p. 480, t. c.
Horcias lacteiclavus, albiventris, signatus, S. America, DISTANT, p. 200, Ann. Nat. Hist. xiii, n. spp.
Hyalopeplus spinosus, Assam, DISTANT, p. 447, Faun. Brit. India Rhynchota ii, n. sp.
Isometopus feanus, Burma, DISTANT, p. 484, t. c. n. sp.
Læmocoris zurudnyi, Persia, REUTER, p. 11, Annuaire Mus. St. Petersb. ix, n. sp.
Liocoridia n. g. near *Lygus*, p. 13, *mutabilis* n. sp., Mou-Pin, pl. ii, fig. 4, p. 14, REUTER, Ofv. Finska Forh. xlv, No. 16.
Liocoris myittæ, formosus, Tenasserim, DISTANT, p. 464, Faun. Brit. India Rhynchota ii, n. spp.

- Lopus bimaculatus* Jak., description, REUTER, p. 1, Ofv. Finska Forh. xlv, No. 14; *L. australis* Walk., referred to *Pantilius* and described, DISTANT, p. 106, Ann. Nat. Hist. xiii.
- Lucitanus* n. g. for *Leptomerocoris punctatus* Kirby, DISTANT, p. 465, Faun. Brit. India Rhynchota ii.
- Lygus australis* n. n. for *innotatus* Walk., p. 110, *æthiops* n. n. for *limbatus* Walk., p. 111, DISTANT, Ann. Nat. Hist. xiii.
- L. abessinicus*, Kupi, p. 7, *vittatus*, Djibouti, p. 8, *perversus*, Scioa, p. 10, *simonyi*, Aden, p. 11, REUTER, Ofv. Finska Forh. xlv, No. 6; *L. schonlandi*, Cape Colony, DISTANT, p. 199, Ann. Nat. Hist. xiii; *L. albescentis*, *decoloratus*, p. 455, *pubens*, *immitis*, p. 456, *catullus*, p. 457, India and Ceylon, DISTANT, Faun. Brit. India Rhynchota ii; *L. flavoscutellatus*, N. Queensland, DISTANT, p. 273, Ann. Nat. Hist. xiii: n. spp.
- Malalasta* n. g. *Capsina*, *M. superba* n. sp., Tenasserim, DISTANT, p. 446, Faun. Brit. India Rhynchota ii.
- Malthacosoma adpersum*, Transcaspian, REUTER, p. 11, Ofv. Finska Forh. xlv, No. 14, n. sp.
- Matenesius* n. g. *Miraria*, p. 425, *M. marginatus* n. sp., Ceylon, p. 426, DISTANT, Faun. Brit. India Rhynchota ii.
- Maurolactylus albidus* var. n. *pallidicornis*, HORVÁTH, p. 585, Ann. Mus. Hungar. ii.
- Megacelum elongatum* to *Pantiliodes*, REUTER, p. 3, Ofv. Finska Forh. xlv, No. 6.
- M. persimile*, Abyssinia, REUTER, p. 4, t. c.; *M. transvaalensis*, Pretoria, DISTANT, p. 196, Ann. Nat. Hist. xiii; *M. relatum*, p. 428, *rubricatum*, Ceylon, *hampsoni*, Nilgiri Hills, p. 429, *picturatum*, Burma, p. 430, DISTANT, Faun. Brit. India Rhynchota ii; *M. modestum*, *townsvillensis*, *suffusum*, N. Queensland, DISTANT, Ann. Nat. Hist. xiii: n. spp.
- Megaloceræa celestialis* to *Trigonotylus*, REUTER, p. 1, Ofv. Finska Forh. xlv, No. 16.
- M. graminea*, *antennata*, p. 424, *elongata*, *dohertyi*, p. 425, India and Ceylon, DISTANT, Faun. Brit. India Rhynchota ii; *M. doddi*, N. Queensland, DISTANT, p. 269, Ann. Nat. Hist. xiii: n. spp.
- Megalocoleus albidus*, Transcaspian, REUTER, p. 9, Ofv. Finska Forh. xlv, No. 4, n. sp.
- Mertila* n. g. *Bryocoraria* for *M. malayensis*, Singapore, *ternatensis*, Ternate, n. spp., DISTANT, p. 113, Ann. Nat. Hist. xiii.
- Mevius* n. g. *M. lewisi* n. sp., Ceylon, DISTANT, p. 453, Faun. Brit. India Rhynchota ii.
- Miris*, the name applied to *Leptopterna* Fieb., REUTER, p. 2, Ofv. Finska Forh. xlv, No. 15.
- M. ruficeps*, Cape Colony, DISTANT, p. 105, Ann. Nat. Hist. xiii; *M. atkinsoni*, Nilgiri Hills, DISTANT, p. 423, Faun. Brit. India Rhynchota ii: n. spp.
- Mycterocoris* n. g. for *Deræocoris cerachates*, UHLER, p. 358, P. U. S. Mus. xxvii.
- Myrmecophyes korschinskii*, p. 4, *cæneus*, p. 5, Turkestan, REUTER, Ofv. Finska Forh. xlv, No. 4, n. spp.
- Mystilus* n. g. *Herdonaria*, *M. priamus* n. sp., Tenasserim, DISTANT, p. 420, Faun. Brit. India Rhynchota ii.
- Nanniella* n. g. *Laboparia*, *N. chalybea* n. sp., Congo, p. 6, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Nichomachus* n. g. *Herdonaria* for *N. sloggetti* n. sp., Cape Colony, DISTANT, p. 104, Ann. Nat. Hist. xiii.
- Nicostratus* n. g. *Cyllocoraria*, *N. balteatus* n. sp., Ceylon, DISTANT, p. 475, Faun. Brit. India Rhynchota ii.
- Nyctidea* n. g. near *Criocoris*, p. 15, *moesta*, E. Siberia, n. sp., p. 17, REUTER, Ofv. Finska Forh. xlv, No. 4.

- Nymannus* n. g. *Miraria* for *N. typicus* n. sp., Cape Colony, DISTANT, p. 195, Ann. Nat. Hist. xiii.
- Oncotylus cunealis*, Persia, REUTER, p. 14, Annuaire Mus. St. Petersb. ix ; *O. fuscicornis*, Mongolia, REUTER, p. 10, Ofv. Finska Forh. xlv, No. 14 : n. spp.
- Onomaus* n. g. *Herdoniaria*, *O. pompeus* n. sp., Assam, DISTANT, p. 416, Faun. Brit. India Rhynchota ii.
- Orthotylus antennalis*, Orotava, p. 6, *pallidulus*, Austria, p. 7, REUTER, Ofv. Finska Forh. xlv, No. 14, n. spp.
- Pantilius gonoceroides*, Mou-Pin, REUTER, p. 4, op. cit. xlv, No. 16, n. sp.
- Paracalocoris capensis*, Cape Good Hope, DISTANT, p. 110, Ann. Nat. Hist. xiii ; *P. barretti*, Cape Colony, DISTANT, p. 199, t. c. ; *P. burmanicus*, *erebus*, Burma, *lanarius*, Ceylon, DISTANT, p. 450, Faun. Brit. India Rhynchota ii : n. spp.
- Paracarnus grenadensis* (= *mexicanus* Uhler), Grenada, DISTANT, p. 62, Ann. Nat. Hist. xiv, n. sp.
- Parapantilius* n. g. p. 5, *P. tibetanus* n. sp., pl. ii, fig. 2, p. 6, Mou-Pin, REUTER, Ofv. Finska Forh. xlv, No. 16.
- Pharyllus* n. g. for *Leptomerocoris pistacinus* Motsch., DISTANT, p. 434, Faun. Brit. India Rhynchota ii.
- Phytocoris zarudnyi*, p. 8, *lineaticollis*, p. 9, Persia, REUTER, Annuaire Mus. St. Petersb. ix ; *P. longicornis*, p. 1, *mæstus*, p. 2, Centr. Asia, REUTER, Ofv. Finska Forh. xlv, No. 16 ; *P. crinitus*, Ceylon, DISTANT, p. 449, Faun. Brit. India Rhynchota ii : n. spp.
- Plagiognathus cinerascens*, Mongolia, REUTER, p. 17, Ofv. Finska Forh. xlv, No. 14, n. sp.
- Pleuroxonotus* n. g. p. 7, *nasutus* n. sp., Transcaspian, p. 8, REUTER, t. c., No. 4.
- Pæciloscytus cuneatus* Dist. (as *Lygus*) (= *obscurus* Uhler), DISTANT, p. 62, Ann. Nat. Hist. xiv.
- P. consanguineus*, *pygmæus*, *capitatus*, Burma and Ceylon, DISTANT, p. 459, Faun. Brit. India Rhynchota ii ; *P. antennatus*, *flavipes*, N. Queensland, DISTANT, p. 274, Ann. Nat. Hist. xiii ; n. spp.
- Polymerus varicornis*, Corea, JAKOVLEV, p. 94, Rev. Russe Ent. iv, n. sp.
- Prodromus* n. g. *Cylaparia*, p. 436, *P. subflavus*, Ceylon, *clypeatus*, *subviridis*, Tenasserim, p. 437, DISTANT, Faun. Brit. India Rhynchota ii.
- Psallopsis*, amended description, REUTER, p. 15, Annuaire Mus. St. Petersb. ix.
- P. basalis*, Persia, id. p. 16, t. c. n. sp.
- Psallus proteus* varr., REUTER, pp. 12, 13, Ofv. Finska Forh. xlv, No. 14.
- P. instabilis*, p. 13, *beckeri*, p. 14, *longiceps*, p. 15, Canaries, REUTER, t. c. ; *P. singalensis*, Ceylon, DISTANT, p. 482, Faun. Brit. India Rhynchota ii : n. spp.
- Rhinofulvius*, characters, p. 1, *R. albifrons*, pl. i, fig. 1, p. 2, REUTER, Ofv. Finska Forh. xlv, No. 6.
- Ropaliceschatus* n. g. near *Pachypeltis*, p. 1, *R. quadrimaculatus* n. sp., Mou-Pin, pl. ii, fig. 1, p. 3, REUTER, op. cit. No. 16.
- Sabellicus* n. g. near *Deræocoris* for *Capsus apicifer*, and *Lopus sordidus* Walk., DISTANT, p. 114, Ann. Nat. Hist. xiii.
- Scirtellus seminitens*, Turkestan, HORVÁTH, p. 584, Ann. Mus. Hungar. ii, n. sp.
- Sophianus* n. g. *Isometopina*, p. 485, *S. alces* n. sp., Ceylon, p. 486, DISTANT, Faun. Brit. India Rhynchota ii.
- Stenodema*, synopsis of Palearctic, REUTER, Ofv. Finska Forh. xlv, No. 15, pp. 3-6.
- S. trispinosum*, Siberia, p. 8, *turanicum*, Transcaspian, p. 11, *alpestre*, p. 13, *elegans*, p. 14, *plebeium*, p. 17, *chinense*, p. 19, Setschuan, REUTER, t. c. n. spp.

- Tancredus* n. g. *Miraria*, *T. sandaracatus* n. sp., Ceylon, DISTANT, p. 430, Faun. Brit. India Rhynchota ii.
Tenthecoris bicolor, characters, DISTANT, p. 202, Ann. Nat. Hist. xiii.
Trachelonotus n. g. near *Læmocoris*, p. 12, *T. unifasciatus* n. sp., Persia, p. 13, REUTER, Annuaire Mus. St. Petersb. ix.
Trichobasis n. g. near *Pantiliodes*, p. 1, *setosa* n. sp., Congo, p. 2, REUTER, Ofv. Finska Forh. xlv, No. 10.
Trigonotylus brevipes, characters, REUTER, p. 5, Annuaire Mus. St. Petersb. ix.
Turnebus n. g. near *Isometopus*, *T. cuneatus* n. sp., Ceylon, DISTANT, p. 485, Faun. Brit. India Rhynchota ii.
Tylopeltis n. g. near *Glossopeltis*, p. 4, *albosignata* n. sp., Congo, p. 5, REUTER, Ofv. Finska Forh. xlv, No. 10.
Tyraquellus n. g. for *Leptomerocoris albofasciatus* Motsch. and *T. maculatus* n. sp., Ceylon, DISTANT, p. 471, Faun. Brit. India Rhynchota ii.
Volkelius n. g. near *Sahlbergella* for *V. sulcatus* n. sp., N. Queensland, DISTANT, p. 271, Ann. Nat. Hist. xiii.
Zanchius n. g. *Cyllocoraria*, *Z. annulatus* n. sp., Ceylon, DISTANT, p. 477, Faun. Brit. India Rhynchota ii.
Zanessa sanguinolenta, Nilgiri Hills, DISTANT, p. 432, t. c. n. sp.

SALDIDÆ.

- Leotichius* n. g. *Leptopinae*, p. 406, *L. glaucopsis* n. sp., Burma, p. 407, DISTANT, Faun. Brit. India Rhynchota ii.
Salda jakowleffi var. n. *mærens*, HORVÁTH, p. 585, Ann. Mus. Hungar. ii.
S. dixonii, India, DISTANT, p. 405, Faun. Brit. India Rhynchota ii, n. sp.
Valleriola n. g. p. 405, *V. greeni* n. sp., Ceylon, p. 406, DISTANT, t. c.

HYDROCORISÆ.

[Cf. DISTANT (386, 391), HORVÁTH (717, 718), KIRKALDY (813).]

- Anatomy of *Ranatra*, breathing organs etc., MARSHALL & SEVERIN, Tr. Wisconsin Ac. xiv, pp. 487-501, pls. xxxiv-xxxvi.
 Annotated catalogue of *Notonectidæ*, KIRKALDY, pp. 93-135, Wien. ent. Zeit. xxiii.
Anisops doris, p. 112, *stali*, p. 113, *endymion*, p. 114, Australia, *bouvieri*, Cochin China, p. 116, KIRKALDY, t. c. n. spp.
Buenoa n. g. type *Anisops antigone* Kirk., p. 120, *B. ida*, Uruguay, p. 121, *salutis*, Brit. Guiana, p. 122, n. spp., KIRKALDY, t. c.
Cercotmetus fumosus, Ceylon, DISTANT, p. 278, Entomologist 1904, n. sp.
Corixa acromelena, Turkestan, HORVÁTH, p. 585, Ann. Mus. Hungar. ii, n. sp.
Helotrephes bouvieri, Celebes, p. 129, *martini*, Sumatra, p. 130, KIRKALDY, Wien. ent. Zeit. xxiii, n. spp.
Laccotrephes flavovenosa Dohrn (as *Nepa*)=(*japonensis* Scott), DISTANT, p. 63, Ann. Nat. Hist. xiv.
L. calcar, Nigeria, *nyasæ*, Nyika Mts., DISTANT, p. 64, t. c. n. spp.
Macrocoris transvaalensis, Lydenburg, DISTANT, p. 258, Entomologist 1904, n. sp.
Micronecta haliploides, Colombo, p. 594, *carbonaria*, New Guinea, p. 595, HORVÁTH, Ann. Mus. Hungar. ii, n. spp.
Mononyx luteovarius, Queensland, DISTANT, p. 63, Ann. Nat. Hist. xiv, n. sp.
Nepa cinerea, salivary glands, BORDAS, C.R. Soc. Biol. lvii, pp. 667-669.
Plea japonica, Akashi, HORVÁTH, p. 594, Ann. Mus. Hungar. ii; *P. buenoi*, Pondicherry, KIRKALDY, p. 128, Wien. ent. Zeit. xxiii : n. spp.

Ranatra sordidula = (*unicolor* Scott), DISTANT, p. 66, Ann. Nat. Hist. xiv.
R. fuscoannulata, Ruwenzori, p. 64, *cinnamomea*, *varicolor*, *natalensis*,
 p. 65, S. Africa, DISTANT, t. c. **n. spp.**
Thurselinus **n. g.** near *Macrocoris*, *T. greeni* **n. sp.**, Ceylon, DISTANT,
 p. 259, Entomologist 1904.

HOMOPTERA.

Catalogue of *Homoptera* (except *Aphid. Coccid.*) of Germany, HUEBER,
 Jahresh. Ver. Wurttemb. lx, pp. 253–277.

CICADIDÆ.

- [Cf. DISTANT (384, 393), GODING & FROGGATT (613), JACOBI (733, 736),
 MATSUMURA (922), MELICHAR (937), NOUALHIER (984), RAINBOW
 (1118).]
 DISTANT (393) commences a revision of *Cicadidæ*, preliminary to a
 synonymic catalogue.
 The Palearctic *Cicadidæ* (in Moravian), MELICHAR, Vestnik. Klub. Proste-
 jove iv, pp. 12–26.
 Monograph of Australian *Cicadidæ*, 119 species, GODING & FROGGATT,
 P. Linn. Soc. N. S. Wales xxix, pp. 561–669, 2 pls.
 Copula between *Cyclochila* and *Thopha*, RAINBOW, Rec. Austral. Mus. v,
 p. 116.
Angamiana floridula, Tonkin, DISTANT, p. 299, Ann. Nat. Hist. xiv, **n. sp.**
Antankaria **n. g.** type *C. madagascariensis* Dist., DISTANT, p. 429, t. c.
Arunta **n. g.** type *C. perulata* Guér., DISTANT, p. 302, t. c.
Cacama **n. g.** type *Proarna maura* Dist., DISTANT, p. 429, t. c.
Cicada vesta, Bombay, pl. xxx, fig. 4, *nigrans*, Madagascar, fig. 1, DISTANT,
 p. 673, Tr. ent. Soc. London 1904; *C. pyropa*, Japan, MATSUMURA,
 p. 53, pl. iii, fig. 4, Annot. zool. Japon. v; *C. andrewsi*, Japan, *umbrosa*,
 Borneo, p. 330, *boliviana*, Chimali [cf. *Oria* below], p. 331, DISTANT,
 Ann. Nat. Hist. xiv; *C. graminea*, Queensland, DISTANT, p. 428, t. c.;
C. hieroglyphica, p. 581, *sylvanella*, p. 582, Australia, GODING &
 FROGGATT, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
Cicadetta montana, in Germany, pp. 283–285, Jahresh. Ver. Wurttemb. lx.
Cosmopsaltria khadiga, Pahang, DISTANT, p. 671, pl. xxx, fig. 9, Tr. ent.
 Soc. London 1904, **n. sp.**
Cryptotympana holsti, Formosa, DISTANT, p. 331, Ann. Nat. Hist. xiv; *C.*
varicolor, Sumbawa, DISTANT, p. 430, t. c. : **n. spp.**
Cystopsaltria **n. g.** *C. immaculata* **n. sp.**, Queensland, GODING & FROGGATT,
 p. 661, P. Linn. Soc. N. S. Wales xxix.
Dundubia spiculata, Cambodia; NOUALHIER, p. 178, pl. xi, figg. 3, 4,
 Mission Pavie iii, **n. sp.**
Fidicina vitellina, p. 155, *parvula*, p. 157, Brazil, JACOBI, SB. Ges. naturf.
 Berlin 1904, **n. spp.**
Gæana paviei, Tonkin, NOUALHIER, p. 179, pl. xi, fig. 5, Mission Pavie iii,
n. sp.
Glaucopsaltria **n. g.** p. 657, *G. viridis* **n. sp.**, Queensland, p. 658, GODING
 & FROGGATT, P. Linn. Soc. N. S. Wales xxix.
Hamzu **n. g.** for *Platypleura bouruensis*, DISTANT, p. 674, pl. xxx, fig. 5, Tr.
 ent. Soc. London 1904.
Henicopsaltria pygmea, S.W. Australia, DISTANT, p. 303, Ann. Nat. Hist.
 xiv, **n. sp.**
Ioba **n. g.** type *P. leopardina* Dist., DISTANT, p. 295, t. c.
Kanakia congrua, Queensland, GODING & FROGGATT, P. Linn. Soc. N. S.
 Wales xxix, **n. sp.**

- Koma* n. g. type *P. bombifrons* Karsch, DISTANT, p. 296, Ann. Nat. Hist. xiv.
- Kongota* n. g. type *P. punctigera* Walk., DISTANT, p. 298, t. c.
- Laceta annulicornis* Karsch, pl. xlv, fig. 4, p. 769, JACOBI, Zool. Jahrb. Syst. xix.
- Macrotristria nigrovenosa*, N. Queensland, DISTANT, p. 329, Ann. Nat. Hist. xiv; *M. nigrosignata*, W. Australia, pl. xxix, fig. 7, p. 673, DISTANT, Tr. ent. Soc. London 1904 : n. spp.
- Melampsalta spinosa*, p. 635, *kershavi*, p. 636, *castanea*, p. 637, *rubristrigata*, *atrata*, p. 638, *fletcheri*, p. 640, *infusata*, *flava*, p. 641, *binotata*, p. 643, *rubricincta*, p. 644, *nebulosa*, *spreti*, p. 647, *fulva*, p. 648, *rubea*, p. 651, *graminis*, p. 652, *tristrigata*, p. 653, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix, n. spp.
- Muansa* n. g. type *P. clypealis* Karsch, DISTANT, p. 295, Ann. Nat. Hist. xiv.
- Munza* n. g. type *P. laticlavata* Stål, DISTANT, p. 297, t. c.
- Oria* n. g. type *Cicada boliviana* Dist., DISTANT, p. 429, t. c.
- Parnisa hamorrhagica*, Brazil, JACOBI, p. 159, SB. Ges. naturf. Berlin 1904, n. sp.
- Pauropsalta* n. g. p. 615, *P. leurensis*, p. 616, pl. xviii, fig. 8, *castanea*, p. 617, *prolongata*, *extensa*, p. 618, *nigristriga*, p. 619, *annulata*, p. 620, *nodicosta*, *dubia*, p. 621, *rubra*, p. 623, *basalis*, p. 625, *emma*, p. 626, *borealis*, p. 627, *minima*, p. 628, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix, n. spp.
- Platypleura antinorii*, p. 765, cut, JACOBI, Zool. Jahrb. Syst. xix.
- P. laticollis*, E. Africa, MELICHAR, p. 25, Verh. Ges. Wien liv; *P. longula*, Delagoa Bay, p. 332, *mira*, Laos, p. 333, *melania*, *bettoni*, Africa, p. 334, DISTANT, Ann. Nat. Hist. xiv; *P. veligera*, pl. xlv, fig. 1, p. 766, *vitticollis*, fig. 2, p. 767, N.E. Africa, JACOBI, Zool. Jahrb. Syst. xix; *P. mackinnoni*, Mussooree, p. 667, pl. xxix, fig. 1, *makaga*, fig. 4, *adouma*, fig. 2, Congo, p. 668, DISTANT, Tr. ent. Soc. London 1904; *P. arminops*, Siam, NOUALHIER, p. 178, pl. xi, figg. 1, 2, Mission Pavie iii; *P. tepperi*, Australia, GODING & FROGGATT, p. 568, pl. xviii, fig. 5, P. Linn. Soc. N. S. Wales xxx : n. spp.
- Pomponia surya*, pl. xxx, fig. 2, p. 671, *melanoptera*, fig. 3, p. 672, Mussooree, DISTANT, Tr. ent. Soc. London 1904, n. spp.
- Psaltoda plebeia*, N. S. Wales, GODING & FROGGATT, p. 589, P. Linn. Soc. N. S. Wales xxix, n. sp.
- Pycna numa*, Mashonaland, pl. xxix, fig. 3, *hecuba*, E. Africa, fig. 6, DISTANT, p. 670, Tr. ent. Soc. London 1904; *P. celestia*, W. China, DISTANT, Ann. Nat. Hist. xiv : n. spp.
- Rihana* n. g. type *Fidicina ochracea* Walk., *R. virgulata*, Mexico, p. 426, *swalei*, hab. ? p. 427, n. spp., DISTANT, t. c.
- Sadaka* n. g. type *P. virescens* Karsch, DISTANT, p. 296, t. c.
- Terpnosia ganesa*, India, p. 675, pl. xxx, fig. 6, *abdullah*, Pahang, p. 676, fig. 7, DISTANT, Tr. ent. Soc. 1904, n. spp.
- Tettigia variegata*, Townsville, GODING & FROGGATT, p. 594, pl. xviii, fig. 9, P. Linn. Soc. N. S. Wales xxix, n. sp.
- Tibicen sankara*, India, DISTANT, p. 675, pl. xxx, fig. 8, Tr. ent. Soc. London 1904; *T. ruber*, p. 600, *doddi*, p. 602, *rubricinctus*, p. 603, *borealis*, p. 604, *kurandæ*, p. 605, *hirsutus*, p. 607, *occidentalis*, p. 608, *flavus*, p. 610, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix : n. spp.
- Tosena seebohmi*, Formosa, DISTANT, Ann. Nat. Hist. xiv, n. sp.
- Trismarcha exsul*, N. E. Africa, JACOBI, p. 768, pl. xlv, fig. 3, Zool. Jahrb. Syst. xix, n. sp.
- Ugada* n. g. type *Tettig. limbata* Fabr., DISTANT, p. 299, Ann. Nat. Hist. xiv.

- U. n. g.* for *Platypleura præcellens*, DISTANT, the insect figured, pl. xxix, fig. 9, p. 669, id. Tr. ent. Soc. London 1904.
U. nutti, Tanganyika, DISTANT, p. 336, Ann. Nat. Hist. xiv, n. sp.
Unjaba n. g. type *P. evanescens* Butl., DISTANT, p. 298, t. c.
Venustria n. g. Tibeceninae, p. 595, *V. superba n. sp.*, Queensland, p. 597, pl. xix, fig. 7, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix.
Xosopsaltria n. n. for *Pydna*, KIRKALDY, p. 280, Entomologist 1904.
Yanga n. g. type *P. hova* Dist., DISTANT, p. 297, Ann. Nat. Hist. xiv.

FULGORIDÆ.

[Cf. FOWLER (614), HORVÁTH (716, 717), JACOBI (734, 736), KIRKALDY (809), MELICHAR (937, 938), NOUALHIER (984).]

Catalogue of *Fulgoridæ* of N. America, SWEZEY (1360).

- Kareol n. n.* for *Anagnia*, *Colgorma n. n.* for *Temora*, *Proutista n. n.* for *Assamia*, *Xosophara n. n.* for *Rhinortha*, *Southia n. n.* for *Paulia*, *Florichisme n. n.* for *Pecilostola*, *Micromasoria n. n.* for *Cona*, *Bergias n. n.* for *Bergia*, *Hesperophantia n. n.* for *Carthæa*, *Thanatophantia n. n.* for *Alicsa*, *Gelastophantia n. n.* for *Cyarda*, *Xosias n. n.* for *Eteocles*, *Anfortas n. n.* for *Gastrinia*, *Gelastyra n. n.* for *Cibyra*, *Thanatophara n. n.* for *Colonia*, KIRKALDY, pp. 279, 280, Entomologist 1904.
Aconia gerstæckeri, Brazil, JACOBI, p. 160, SB. Ges. naturf. Berlin 1904, n. sp.
Acrobelus delphinus, Tonkin, NOUALHIER, p. 182, pl. x, fig. 10, Mission Pavie iii, n. sp.
Aloha n. g. near *Megamelus*, *A. ipomeæ n. sp.*, Oahu, KIRKALDY, p. 177, Entomologist 1904.
Amphiscepa calida, pl. xii, fig. 8, p. 118, *A. subpellucida*, fig. 9, p. 119, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Anotia smithi, pl. ix, fig. 3, *marginicornis*, fig. 4, *pellucida*, p. 77, *ruficollis*, fig. 5, *venustula*, fig. 6, *tenella*, fig. 7, p. 78, *invalida*, fig. 8, p. 79, Central America, FOWLER, t. c. n. spp.
Bothriocera tinealis, pl. ix, figg. 11, 12, *signoreti*, fig. 13, FOWLER, t. c.
B. venosa, pl. ix, fig. 14, *excelsa*, fig. 15, *pellucida*, fig. 16, p. 83, *albipennis*, figg. 17, 18, *nigra*, fig. 19, p. 84, Central America, FOWLER, t. c. n. spp.
Bothrioceros n. g. p. 84, *B. variegatus*, pl. ix, fig. 20, *castaneus*, fig. 21, *metallicus*, fig. 22, n. spp., Central America, p. 85, FOWLER, t. c.
Caliscelis, table of palaearctic, HORVÁTH, pp. 378-380, Ann. Mus. Hungar. ii.
C. maroccana, Tanger, p. 381, *bolivari*, Madrid, p. 382, *peculiaris*, Asia Minor, p. 384, id. t. c. n. spp.
Cedusa n. g. near *Plectoderes*, *C. funesta*, pl. xi, fig. 28, *venosa*, fig. 29, n. spp., Mexico, FOWLER, p. 112, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Cixius montanus, pl. x, fig. 25, *comptus*, fig. 26, p. 96, *flavobrunneus*, fig. 27, *apicatus*, fig. 28, p. 97, Central America, FOWLER, t. c. n. spp.
Cyclumna n. g. Issidæ, *C. subrotundata*, pl. xii, fig. 5, n. sp., Mexico, FOWLER, p. 116, t. c.
Cyrene obtusata, Bangkok, NOUALHIER, p. 182, pl. x, fig. 9, Mission Pavie iii, n. sp.
Delphax conspicua, Turkestan, HORVÁTH, p. 589, Ann. Mus. Hungar. ii, n. sp.
Dendrophora breviceps, E. Africa, MELICHAR, p. 30, Verh. Ges. Wien liv, n. sp.
Dictyophara ogadensis, p. 38, *ufudensis*, p. 29, E. Africa, MELICHAR, t. c. ;

- D. sertata*, p. 162, *multireticulata*, p. 163, Brazil, JACOBI, SB. Ges. naturf. Berlin 1904 : n. spp.
- Eparmene* n. g. *Cixiides*, *E. pulchella*, pl. xi, fig. 6, n. sp., Panama, FOWLER, p. 101, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Fulgora monetaria*, Cambodia, NOUALHIER, p. 180, pl. x, fig. 3, Mission Pavie iii, n. sp.
- Grynia nigricoxis*, pl. xi, fig. 9, p. 193, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Haplaxius* n. g. near *Cixius*, p. 97, *H. laevis*, pl. x, figg. 29, 30, *frontalis*, fig. 31, p. 98, n. spp., Mexico, FOWLER, t. c.
- Helicopter* *sobrino*, pl. xi, fig. 14, var. *albido-variegata*, fig. 15, p. 106, *chiriquensis*, fig. 16, *longiceps*, fig. 17, p. 107, Centr. America, id. t. c. n. spp.
- Hemisphaerius interclusus*, Cambodia, NOUALHIER, p. 181, pl. x, fig. 4, Mission Pavie iii, n. sp.
- Hyphancylus* n. g. *Issidæ*, *H. falcatus*, pl. xii, fig. 6, *excelsus*, fig. 7, n. spp., Mexico, FOWLER, p. 117, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Hysteropterum sierræ*, pl. xii, fig. 10, p. 119, *angulare*, fig. 11, *montanum*, fig. 12, p. 120, Mexico, FOWLER, t. c. n. spp.
- Liburnia campestris*, natural history, and parasite, SWEZEY, pp. 43-46, Bull. U. S. Dep. Agric. Ent. xlv.
- Megamelus leahi*, Oahu, KIRKALDY, p. 176, Entomologist 1904, n. sp.
- Metabrixia* n. g. *M. delicata*, pl. ix, fig. 23, p. 86, *aspera*, fig. 24, *germana*, fig. 25, p. 87, *tacta*, pl. x, fig. 1, *maculata*, fig. 2, p. 88, n. spp., Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Micrixia* n. g. *Cixiides*, p. 100, *M. costalis*, pl. xi, fig. 5, n. sp., Mexico, p. 101, FOWLER, t. c.
- Microlerida* n. g. *Cixiides*, *M. asperata*, pl. xi, figg. 1, 2, n. sp., Mexico, FOWLER, p. 99, t. c.
- Mnemosyne planiceps*, pl. xi, figg. 7, 8, p. 102, FOWLER, t. c.
- Œcleus, seminiger*, pl. x, fig. 3, p. 89, *decens*, figg. 6, 7, p. 90, FOWLER, t. c.
- Œ. tenellus*, pl. x, fig. 4, *teape*, fig. 5, p. 89, *pellucens*, figg. 8, 9, *minimus*, fig. 10, p. 90, *brunneus*, fig. 11, *concinus*, fig. 12, *addendus*, fig. 13, p. 91, Central America, FOWLER, t. c. n. spp.
- Oliaria hirtus, frontalis*, E. Africa, MELICHAR, p. 31, Verh. Ges. Wien liv; *O. cucullatus*, p. 180, pl. xi, figg. 7 & 8, *petasatus*, figg. 9 & 10, p. 181, Cambodia, NOUALHIER, Mission Pavie iii; *O. excelsus*, pl. x, fig. 14, *concinulus*, fig. 15, p. 92, *propior*, fig. 16, *lacteipennis*, fig. 17, p. 93, *humeralis*, fig. 18, *breviceps*, fig. 19, *chiriquensis*, fig. 20, p. 94, *insignior*, figg. 21, 22, *nigro-alutaceus*, figg. 23, 24, p. 95, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i : n. spp.
- Ornithissus* n. g. *Issidæ*, p. 121, *O. cockerelli*, pl. xii, fig. 14, n. sp., Mexico, p. 122, FOWLER, t. c.
- Pachyntheisa* n. g. *Cixiides*, p. 99, *P. concinna*, pl. xi, fig. 3, *excelsior*, fig. 4, n. spp., Mexico, p. 100, FOWLER, t. c.
- Parapioxys viridifasciatus, hilaris*, E. Africa, MELICHAR, p. 27, Verh. Ges. Wien liv, n. spp.
- Patara marmorata*, Guatemala, pl. ix, fig. 9, p. 79, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i, n. sp.
- Peregrinus* n. g. *Asiracinae*, p. 175, for *Delphax maidis* Ashm., KIRKALDY, Entomologist 1904.
- Perkinsiella saccharicida*, natural history, PERKINS, Rep. exp. Stat. Hawaii 1904, pp. 43-66.
- Phylloscelis atra*, macropterous form, OSBORN, p. 93, cuts, Ohio Natural. iv.
- Plectoderes championi*, pl. xi, fig. 19, p. 108, *basalis*, fig. 20, *excelsus*, fig. 21, *flavovittatus*, fig. 22, p. 109, *notatus*, fig. 23, *montanus*, fig. 24, *asper*, fig. 25, p. 110, *lineatocollis*, fig. 26, *fuscolineatus*, fig. 27, p. 111, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i, n. spp.

- Pochazoides asperatus*, E. Africa, MELICHAR, p. 33, Verh. Ges. Wien liv, **n. sp.**
Proteinissus n. g. Issidæ, *P. bilimeki*, pl. xii, fig. 13, **n. sp.**, Mexico, FOWLER, p. 121, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Pseudohelicoptera n. g. p. 107, *P. nasuta*, **n. sp.**, Panama, pl. xi, fig. 18, p. 108, FOWLER, t. c.
Putala apicata, E. Africa, MELICHAR, p. 29, Verh. Ges. Wien liv, **n. sp.**
Rhamphixius n. g. Cixiides, *R. championi*, **n. sp.**, Central America, pl. ix, fig. 10, FOWLER, p. 81, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Rhinophantia fatua, E. Africa, MELICHAR, p. 33, Verh. Ges. Wien liv, **n. sp.**
Ricania erlangeri, E. Africa, MELICHAR, p. 32, t. c.; *R. flabellum*, Cambodia, NOUALHIER, p. 181, pl. xi, fig. 11, Mission Pavie iii : **n. spp.**
Rudia diluta, pl. xi, fig. 10, p. 104, *bicincta*, fig. 12, p. 105, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. ii.
R. proxima, pl. xi, fig. 11, p. 104, *verticalis*, fig. 13, p. 105, Central America, FOWLER, t. c. **n. spp.**
Seliza squamula, E. Africa, MELICHAR, p. 34, Verh. Ges. Wien liv, **n. sp.**
Thionia variegata, pl. xii, figg. 15, 16, p. 122, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
T. breviar, pl. xii, fig. 17, *scutellata*, fig. 18, p. 123, *sordida*, fig. 19, *humilis*, fig. 20, *naso*, fig. 21, p. 124, Mexico, FOWLER, t. c. **n. spp.**
Ulises clypeatus, pl. xii, fig. 1, p. 114, FOWLER, t. c.
U. intermedius, Mexico, pl. xii, figg. 3, 4, p. 115, FOWLER, t. c. **n. sp.**

FLATIDES.

[Cf. JACOBI (734), SCHMIDT (1228, 1228).]

- Atracis dentata*, Benue, SCHMIDT, p. 376, Stettin Ent. Zeit. lxx, **n. sp.**
Eythopsyrra, analysis, p. 186, *B. ligata* ♂, p. 189, SCHMIDT, t. c.
B. dolrni, p. 188, *udei*, p. 189, *sumatrana*, p. 191, *violacea*, p. 209, Sumatra, SCHMIDT, t. c.; *B. rabbowi*, Java, SCHMIDT, p. 355, t. c. : **n. spp.**
Cerynia nigropustulata, Sumatra, SCHMIDT, t. c. **n. sp.**
Copsyrna alma, Sumatra, SCHMIDT, p. 185, t. c. **n. sp.**
Dascalidia punctata, Pará, p. 373, *unimaculata*, Ecuador, p. 374, SCHMIDT, t. c. **n. spp.**
Doria haenschii, p. 356, *ecuadoriana*, p. 357, Ecuador, SCHMIDT, t. c. **n. spp.**
Euphanta luridicosta, p. 359, *rubromarginata*, p. 360, Queensland, SCHMIDT, t. c. **n. spp.**
Flata ferruginea, Borneo, SCHMIDT, p. 354 and var. *æruginea*, p. 355, t. c. **n. sp.**
Flatoides simulans, Ecuador, SCHMIDT, p. 378, t. c. **n. sp.**
Flatoptera virescens, Borneo, SCHMIDT, p. 358, t. c. **n. sp.**
Flatula bipunctata, Borneo, SCHMIDT, p. 362, t. c. **n. sp.**
Ormenis maculata, S. America, p. 363, *panamensis*, Panama, p. 364, *fumata*, Ecuador, p. 365, *pehlkei*, Colombia, p. 366, *tæniata*, Sumatra, p. 368, *prasina*, Ceylon, p. 370, SCHMIDT, t. c. **n. spp.**
Nephesa truncaticornis ♂, SCHMIDT, p. 203, t. c.
N. carinulata, p. 205, *aurantiaca*, p. 211, Sumatra, id. t. c. **n. spp.**
Paratella variegata, Obi, SCHMIDT, p. 370, t. c. **n. sp.**
Phyma unipunctata, *pura*, p. 196, *hyalina*, *griseo-punctata*, p. 197, *waterstradti*, p. 211, Sumatra, SCHMIDT, t. c.; *P. subapicalis*, Amboina, SCHMIDT, p. 361, t. c. : **n. spp.**
Pæcilopectera phalaenoides and allies, table of forms, p. 14, *P. fritillaria* = (*suturata* Mel.), p. 7, *P. melichari* n. n. for *fritillaria* Mel. nec Er., p. 9, *P. phalaenoides* subsp. n. *completa*, p. 12, *parca*, p. 13, JACOBI, SB. Ges. naturf. Berlin 1904.
P. miliaria, Colombia, p. 8, JACOBI, t. c. **n. sp.**

- Pseudoryxa* n. g. near *Oryxa*, p. 200, *P. carinulata* n. sp., Sumatra, p. 201, SCHMIDT, Stettin Ent. Zeit. lxv.
Sanurus venosus ♂, SCHMIDT, p. 194, t. c.
Sephena tricolor, Java, SCHMIDT, p. 372, t. c. n. sp.
Siphanta rubra, Queensland, SCHMIDT, p. 358, t. c. n. sp.
Uxantis tenia, Sumatra, SCHMIDT, p. 206, t. c. n. sp.
Walkeria melichari, Sumatra, SCHMIDT, p. 192, t. c. n. sp.

MEMBRACIDÆ.

The Palearctic *Membracidae* and *Cercopidae* (in Moravian), MELICHAR, pp. 3-34, Vestnik. Klub. Prostějov iv.

Leptocentrus subflavus, Cambodia, NOUALHIER, p. 183, pl. x, fig. 5, Mission Pavie iii, n. sp.

CERCOPIDÆ.

[Cf. BREDDIN (172), GIRAULT (612), JACOBI (733, 735), MATSUMURA (922), NOUALHIER (984).]

- Anomus cornutulus*?, relations with ants, PENZIG, pp. 64-67, pl. ii, Atti Soc. Ligustica xv.
Aphrophora assimilis Uhl. (= *Rhinaulax apicalis*), *A. vittata* var. (= *niijima* Mats.), MATSUMURA, p. 32, Annot. zool. Japon. v; *A. parallela*, habits, froth-formation, GIRAULT, pp. 44-48, Canad. Ent. xxxvi.
A. scutellata, p. 34, pl. ii, fig. 8, *brevis, compacta*, fig. 7, p. 35, *fallax*, p. 36, *abieti*, fig. 6, p. 37, *flavomaculata*, fig. 3, p. 39, *harimaensis*, fig. 11, p. 41, *vitis*, fig. 9, p. 42, *nigricans*, p. 43, Japan, MATSUMURA, Annot. zool. Japon. v, n. spp.
Callitettix carinifrons, Siam, NOUALHIER, p. 184, pl. x, fig. 8, and pl. xi, fig. 3, Mission Pavie iii, n. sp.
Clovio callifera, pl. xlv, fig. 15, p. 777, JACOBI, Zool. Jahrb. Syst. xix.
Cosmoscarta undata var. n. *obscurata*, NOUALHIER, p. 183, pl. x, fig. 6, Mission Pavie iii.
C. carens, Tonkin, NOUALHIER, p. 183, pl. x, fig. 7, t. c. n. sp.
Hemipterus n. g. p. 777, near *Tremapterus*, *H. decurtatus* n. sp., Kaffa, p. 778, pl. xlv, fig. 16, JACOBI, Zool. Jahrb. Syst. xix.
Locris amauroptera, p. 772, pl. xlv, fig. 7, *neumannii*, p. 773, fig. 9, *vestigans*, p. 774, fig. 10, N. E. Africa, JACOBI, t. c.; *L. ochroptera*, E. Africa, JACOBI, p. 16, SB. Ges. naturf. Berlin 1904 : n. spp.
Mesoptylus n. g. p. 48, *M. nigrifrons*, pl. ii, fig. 13, p. 49, n. sp., Japan, MATSUMURA, Annot. zool. Japon. v.
Oxyrrhacis tarandus, nymph, JACOBI, p. 17, SB. Ges. naturf. Berlin 1904.
Peuceptylus nawæ, p. 44, pl. ii, fig. 14, *nigroscutellatus*, fig. 16, p. 45, *medius*, fig. 15, *dimidiatus*, p. 47, Japan, MATSUMURA, Annot. zool. Japon. v, n. spp.
Poophylus terrenus Walk., pl. xlv, fig. 13, *griseus*, Schaum, fig. 14, p. 776, JACOBI, Zool. Jahrb. Syst. xix.
Ptyelus æthiops, N. E. Africa, JACOBI, p. 775, pl. xlv, fig. 12, t. c.; *P. bipunctulatus*, E. Africa, MELICHAR, p. 36, Verh. Ges. Wien liv : n. spp.
P. abieti, pl. ii, fig. 17, p. 50, *guttatus*, pl. iii, fig. 2, p. 51, *glabrifrons*, fig. 3, p. 52, Japan, MATSUMURA, Annot. zool. Japon. v : n. spp.
Tomaspis invenusta, Sobat, JACOBI, p. 771, pl. xlv, fig. 6, Zool. Jahrb. Syst. xix; *T. laqueus, erigenea, rhodopepla, nox, illuminatula, phantastica*, p. 58, *ephippiata, tettigoniella*, p. 59, Ecuador, BREDDIN, Soc. ent. xix : n. spp.

JASSIDÆ.

[Cf. ASHMEAD (54), BRÈTHES (175), HORVÁTH (717), JACOBI (733), KIRKALDY (809), MELICHAR (937), MEUNIER (944), NOUALHIER (984), SLINGERLAND (1306).]

For a nov. gen. of *Jassidæ* of secondary epoch, see Palæoent. p. 125.

Alchisme n. n. for *Triquetra*, *Mysolis* n. n. for *Norsia*, *Thrasymedes* n. n. for *Phacusa*, *Gelastogonia* n. n. for *Oxygonia*, *Boethoos* n. n. for *Parmula*, *Eteoneus* n. n. for *Anomus*, *Kronides* n. n. for *Argante*, *Sundarion* n. n. for *Pyranthe*, *Zanophara* n. n. for *Dauunus*, *Gelastophara* n. n. for *Hypsilotropis*, *Hesperophara* n. n. for *Leptophara*, *Dioclophara* n. n. for *Lucilla*, KIRKALDY, p. 279, Entomologist 1904.

Cicadula clypeata, E. Africa, MELICHAR, p. 47, Verh. Ges. Wien liv; *C. unguæ*, Alaska, ASHMEAD, p. 134, Alaska viii : n. spp.

Deltocephalus stummeri, Turkestan, HORVÁTH, p. 587, Ann. Mus. Hungar. ii; *D. coronatus*, p. 45, *agerutus*, p. 46, E. Africa, MELICHAR, Verh. Ges. Wien liv; *D. harrimani*, *evansi*, Alaska, ASHMEAD, p. 132, Alaska viii; *D. hospes*, Oahu, KIRKALDY, p. 177, Entomologist 1904 : n. spp. *Ectomops rubescens*, Siam, NOUALHIER, p. 185, pl. x, fig. 12, Mission Pavie iii, n. sp.

Eutettix quadripunctatus, E. Africa, MELICHAR, p. 44, Verh. Ges. Wien liv; *E. perkinsi*, Oahu, KIRKALDY, p. 178, Entomologist 1904 : n. spp.

Gnathodus punctatus var. n. *lineolatus*, HORVÁTH, p. 586, Ann. Mus. Hungar. ii.

G. bipunctatus, E. Africa, MELICHAR, p. 47, Verh. Ges. Wien liv, n. sp.

Hecalus dubius, E. Africa, MELICHAR, p. 36, t. c.; *H. platatea*, Siam, NOUALHIER, p. 184, pl. x, fig. 11, Mission Pavie iii : n. spp.

Idiocerus almasyi, Turkestan, HORVÁTH, p. 588, Ann. Mus. Hungar. ii, n. sp.

Jassus tornowii, Tucuman, BRÈTHES, p. 344, An. Mus. Buenos Aires xi, n. sp.

Macropsis serena, E. Africa, MELICHAR, p. 35, Verh. Ges. Wien liv, n. sp.

Palicurus africanus, p. 40, *conjunctus*, p. 41, E. Africa, MELICHAR, t. c. n. spp.

Parabolocratus tæniotus, Jambo, JACOBI, p. 780, pl. xlv, fig. 17, Zool. Jahrb. Syst. xix, n. sp.

Pediopsis pictipes, Turkestan, HORVÁTH, p. 589, Ann. Mus. Hungar. ii, n. sp.

Phlepsius chloroticus, p. 38, *fasciolatus*, p. 39, *rhomboideus*, p. 40, E. Africa, MELICHAR, Verh. Ges. Wien liv, n. spp.

Platymetopius niveimarginatus, E. Africa, MELICHAR, p. 43, t. c. n. sp.

Scaphoideus strigulatus, E. Africa, MELICHAR, p. 42, t. c. n. sp.

Siva bipunctula, E. Africa, MELICHAR, p. 38, t. c. n. sp.

Stymphalus? *caliger*, E. Africa, MELICHAR, p. 37, t. c. n. sp.

Tettigometra impressifrons and *costulata*, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.

Tettigoniella n. n. for *Tettigonia* auctt., JACOBI, p. 778, Zool. Jahrb. Syst. xix.

Thamnotettix macilentus, Turkestan, HORVÁTH, p. 586, Ann. Mus. Hungar. ii, n. sp.

Typhlocyba comes, the grape leaf-hopper, natural history, SLINGERLAND, Bull. Cornell Exp. Stat. No. 215, illustrations.

PSYLLIDÆ.

[Cf. ASHMEAD (55), HORVÁTH (717), SCHWARZ (1263).]

Structure formed by larva on leaves, SCHWARZ, pp. 153, 154, P. ent. Soc. Washington vi.

- Aphalara schwarzi*, p. 135, *kincaidi*, *alaskensis*, p. 136, Alaska, ASHMEAD, Alaska viii, **n. spp.**
Calophya triozeomina, p. 241, *californica*, p. 242, *flavida*, p. 243, cuts, p. 244, SCHWARZ, P. ent. Soc. Washington vi, **n. spp.**
Euphalerus **n. g.** *Apharina*, p. 238, *E. nidifex* **n. sp.**, p. 239, Florida, SCHWARZ, t. c.
Euphyllura arctostaphyli, p. 235, and var. *niveipennis*, p. 236, *arbuti*, p. 237, N. America, SCHWARZ, t. c. **n. spp.**
Psylla nasuta, Turkestan, HORVÁTH, p. 590, Ann. Mus. Hungar. ii; *P. alaskensis*, Alaska, ASHMEAD, p. 137, Alaska viii: **n. spp.**
Trichochermes **n. n.** for *Trichopsylla*, KIRKALDY, p. 280, Entomologist 1904.

APHIDÆ.

[Cf. BALBIANI (77), CHOLODKOVSKY (273, 274), COCKERELL (288), FLÖGEL (519), FROGGATT (562), PERGANDE (1023-1025), SCHOUTEDEN (1240), STAUFFACHER (1335), STSCHEKANOVZEW (1352), THEOBALD (1375).]

The forms and development of *Aphis ribis*, FLÖGEL, Allg. Zeitschr. Ent. ix, pp. 321-333 and 375-381.

Organ of hearing, *Chermes*, STAUFFACHER (1335).

Sex in *Aphidæ*, BALBIANI (77).

Oogenesis in viviparous *Aphis rosæ*, STSCHEKANOVZEW (1352).

The wax-glands of *Chermes*, CHOLODKOVSKY, p. 557, pl. xxxi, figg. 4-6, Zool. Jahrb. Syst. xix.

Panaphis **n. n.** for *Ptychodes*, *Dryaphis* **n. n.** for *Dryobius*, *Hamadryaphis* **n. n.** for *Kessleria*, *Dryopeia* **n. n.** for *Endeis*, *Hyadaphis* **n. n.** for *Siphonocoryne* Pass. 1863 not 1860, KIRKALDY, p. 279, Entomologist 1904.

Aphis persicæ-niger in Australia, FROGGATT, Agric. Gaz. N. S. W. xv, pp. 603-612.

A. sorghi, Sudan, injuring *Sorghum*, THEOBALD, p. 43, plate, 1st Rep. Wellcome Lab. **n. sp.**

Cerataphis latania, note, SCHOUTEDEN, p. 5, Hamburg, Magalhaen. Reise vii.

Chermes, in Colorado, GILLETTE, p. 81, Canad. Ent. xxxvi; *C. orientalis*, gall, *C. pini* variable in migration, distinction queried, CHOLODKOVSKY, pp. 476-479, Zool. Anz. xxvii.

Cladobius beaulahensis, New Mexico, COCKERELL, p. 263, Canad. Ent. xxxvi, **n. sp.**

Macrosiphum granaria, *cereal**is*, forms, natural history; PERGANDE, p. 13-21, Bull. Dep. Agric. Ent. xlv; *M. ambrosiæ* var., COCKERELL, p. 262, Canad. Ent. xxxvi.

M. trifolii, N. America, PERGANDE, p. 21, Bull. U. S. Dep. Agric. Ent. xlv, **n. sp.**

Phylloxera caryæ-septum var. *n. perforans*, pl. i, figg. 7, 8, pl. x, figg. 57-60, PERGANDE, P. Davenport Ac. ix.

P. picta, pl. ii, fig. 10, pl. ix, fig. 48, pl. x, figg. 61-63, p. 197, *intermedia*, pl. ii, figg. 11-14, pl. x, figg. 64, 65, p. 199, *foveola*, pl. iii, figg. 15, 16, p. 200, *pilosula*, pl. ii, fig. 17, pl. ix, fig. 49, p. 202, *deplanata*, p. 205, pl. iii, figg. 18-20, pl. iv, figg. 21-23, pl. x, figg. 66-70, *rimosalis*, p. 217, pl. iv, fig. 24, pl. ix, fig. 54, *symmetrica*, p. 230, with var. *vasculosa*, *purpurea*, p. 233, *notabilis*, p. 235, pl. xii, figg. 82-90, *spinuloida*, p. 247, pl. xvii, figg. 128, 130, *devastatrix*, p. 248, figg. 131-135, *georgiana*, p. 249, pl. xv, figg. 115-117, *perniciosa*, p. 251, pl. viii, fig. 45, pl. xv, figg. 120-123, pl. xviii, figg. 136-140, *querceti*, p. 263, pl. xx, figg. 155-158, *popularia*, p. 266, pl. xxi, figg. 159, 160, *salicicola*, p. 267, pl. xxi, figg. 161-168, *nyssæ*, p. 269, pl. xxi, figg. 169-174, North America, PERGANDE, t. c. **n. spp.**

- Rhopalosiphum acenæ*, Tierra del Fuego, SCHOUTEDEN, p. 4, Hamburg. Magalhaen. Reise vii, n. sp.
Sipha berleset, characters, DEL GUERCIO, p. 4, Bull. Soc. ent. Ital. xxxvi.
Siphocoryne avenæ, natural history, synonymy, PERGANDE, pp. 5-13, Bull. Dep. Agric. Ent. xlv.

ALEYRODIDÆ.

Descriptions of many species, with account of life-history and habits, BEMIS, pp. 471-537, pls. xxvii-xxxvii.

- Aleyrodes iridescens*, p. 487, *splendens*, p. 489, *pruinosis*, p. 491, *tentaculatus*, p. 494, *kelloggi*, p. 499, *errans*, p. 500, *madroni*, p. 507, *stanfordi*, p. 508, *interrogationis*, p. 510, *merlini*, p. 512, *amnicola*, p. 514, *diasemus*, p. 516, *glacialis*, p. 518, *quaintancei*, p. 520, *nigrans*, p. 522, *maskelli*, p. 524, *wellmanæ*, p. 525, *extraniens*, p. 526, *hutchingsi*, p. 532, California, BEMIS, P. U. S. Mus. xxvii, n. spp.

COCCIDÆ.

- (Cf. BERLESE (106), COCKERELL (294, 295), EMBLETON (450, 451), FROGGATT (560), GREEN (620, 622-626), KIRKALDY (810, 811), MARCHAL (909, 913), MAZZARELLI (929), REH (1126, 1127), REUTER (1159), SANDERS (1207, 1208), STEBBING (1336).]

The nomenclature of *Hemiptera* and specially of *Coccidæ*; KIRKALDY, pp. 254-258, Entomologist 1904.

GREEN publishes part 3 of the *Coccidæ* of Ceylon; it deals with *Lecanium*; in a supplementary note he deals cautiously with recently proposed transfers of some of the oldest generic names, which would, if effected, be "a grave misfortune."

Coccidæ of Orange, table, COCKERELL, Mem. Soc. Ant. Alzate xiii, pp. 349-351.

Notes on methods of research etc., EMBLETON, Knowledge (n. s.) i, pp. 224 etc.

The *Coccidæ* of Ohio, descriptive list, 9 plates, SANDERS (1208).

Notes on the natural history of North European *Coccidæ*, conclusion, 19 spp., list of plants and the species found on them, REH, Allg. Zeitschr. Ent. ix, pp. 12-36.

Distribution and food plants of some *Diaspini*, REH, pp. 171-178.

Amelococcus n. g. *A. alluaudi* n. sp., Madagascar, MARCHAL, p. 557, Ann. Soc. ent. France 1904.

Antonina australis, Hunter River, GREEN, p. 463, pl. xvi, P. Linn. Soc. N. S. Wales xxix, n. sp.; *A. australis*, FROGGATT, pp. 407-410, plate, Agric. Gaz. N. S. W. xv.

Aspidiotus ancylus, taxonomy, synonymy, variation, COCKERELL, P. Davenport Ac. ix, pp. 61, 62.

A. (Pseudonauidia) curculiginis, Java, GREEN, p. 208, Ent. Mag. xl; *A. (Hemiberlesia) immaculatus*, p. 65, *A. (Targionia) subferrens*, p. 66, Victoria, GREEN, Victorian Natural. xxi; *A. piceus*, Ohio, SANDERS, p. 96, pl. viii, fig. 66, Ohio Natural. iv: n. spp.

Asterolecanium variolosum, galls, DE STEFANI, L'Ora 1904, 8 pp.: cf. Marcellia iii, p. v.

Chatococcus and *Antonina*, identical, GREEN, p. 465, P. Linn. Soc. N. S. Wales xxix.

Chionaspis furfurus, no. of eggs, GIRAULT, p. 3, Ent. News Philad. xv.

C. formosa, Australia, GREEN, p. 462, P. Linn. Soc. N. S. Wales xxix;

- C. angusta*, Victoria, GREEN, p. 67, Victorian Natural. xxi; *C. sylvatica*, Ohio, SANDERS, p. 95, pl. viii, figg. 64, 65, Ohio Natural. iv : n. spp.
- Chrysomphalus minor*, spread in Europe, natural history, MARCHAL, pp. 246-249, Bull. Soc. ent. France 1904.
- Cryptococcus fagi*, injuries and remedies, NEWSTEAD, pp. 755-760, J. Board Agric. xi.
- Ctenochiton serratus*, Victoria, GREEN, p. 67, Victorian Natural. xxi, n. sp.
- Coccus caudatus, poterii* Walk. notes on, p. 373, *C. sinensis*, cf. *Ericera pela*, GREEN, Ann. Nat. Hist. xiv.
- Diaspis pentagona*, anatomical and physiological notes, MAZZARELLI, Atti Mus. Milano xliii, pp. 15-19.
- Ericera pela* = (*Coccus sinensis* Walk.), GREEN, p. 374, Ann. Nat. Hist. xiv.
- Eriococcus sordidus*, Australia, GREEN, p. 68, Victorian Natural. xxi, n. sp.
- Eulecanium curtisi* n. n. for *Coccus aceris* Curtis, KIRKALDY, p. 257, Entomologist 1904.
- Kermes gillettei*, no. of eggs, HIMEBAUGH, p. 188, Ent. News Philad. xv.
- Lecanium (Paralecanium) expansum* var. *metallicum*, GREEN, p. 377, Ann. Nat. Hist. xiv; *L. capense* Walk. redescribed as *Aspidiotus (Aonidiella) capensis*, GREEN, p. 375, t. c.; *L. hesperidum*, ♂ in Australia, HOWARD, p. 62, P. ent. Soc. Washington vi; *L. expansum* var. n. *metallicum, javanicum*, p. 205, *rotundum*, p. 206; GREEN, Ent. Mag. xl.
- L. capparidis*, p. 187, pl. lxiii, *frontale*, p. 192, pl. lxv, *signiferum*, p. 197, pl. lxviii, *discrepans*, p. 204, pl. lxx, *punctuliferum*, p. 205, pl. lxx, *subtessellatum*, p. 206, pl. lxxi, *marsupiale*, p. 212, pl. lxxv, *bicruciatum*, pl. 214, pl. lxxvi, *arundinarie*, p. 220, pl. lxxix, *psidii*, pl. lxxxii, p. 225, *calophylli*, p. 240, pl. lxxxix, *paradeniyense*, p. 241, pl. xc, *zonatum*, pp. 245, pl. xcii, *maritimum*, p. 246, pl. xciii, Ceylon, GREEN, *Coccidæ*, Ceylon; *L. tenebricophilum*, Java, GREEN, p. 204, Ent. Mag. xl : n. spp.
- Lepidosaphes cockerelliana* n. n. for *Mytilaspis albus* Cock., KIRKALDY, p. 257, Entomologist 1904.
- L. corrugata*, Java, GREEN, p. 209, Ent. Mag. xl, n. sp.
- Margarodes*, longevity, MAYET, p. 206, Bull. Soc. ent. France 1904.
- Monophlebus stebbingi*, natural history, STEBBING, J. Linn. Soc. London xxix, pp. 142-161, pls. xvi-xviii.
- Mytilaspis spinifera*, amended characters, GREEN, p. 463, P. Linn. Soc. N. S. Wales xxix.
- M. ficifolii*, Italy, BERLESE, Atti Ist. Napoli (5) v, No. 12, p. 3, plate, n. sp.
- Orihezia solidaginis*, Ohio, SANDERS, p. 94, pl. viii, figg. 57-63, Ohio Natural. iv, n. sp.
- Pseudococcus graminis*, Finland, REUTER, p. 66, Medd. Soc. Faun. Fenn. 1902-03, n. sp.
- Pulvinaria maxima*, Java, GREEN, p. 206, Ent. Mag. xl, n. sp.
- Trionymus hordei*, omitted from Fernald's Cat., Ent. News Philad. xv, p. 40.

ANOPLURA.

- Ellipoptera* n. n. for *Anoplura*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- The mouth-parts and external anatomy, ENDERLEIN, pp. 121-125, Zool. Anz. xxviii.
- The classification and systematic position of *Anoplura*, table of genera etc., ENDERLEIN, t. c. pp. 134-140, and supplement, p. 220.
- Organs for holding, on feet of *Pediculidæ*, OSBORN, Ohio Natural. iv, pp. 107, 108, cuts.
- The *Pediculidæ* of rats and mice, TIRABOSCHI, pp. 311-319, Arch. parasit. viii.

Hæmodipsas n. g. for *lyriocephalus*, Burm. and *ventricosus* Denny, ENDERLEIN, Zool. Anz. xxviii, p. 143.

Hoplopleura n. g. type *H. acanthopus* Burm., ENDERLEIN, t. c. p. 221.

Lepidophthirus n. g. on *Macrorhinus leoninus*, Kerguelen isld., p. 44,

L. macrorhini n. sp., p. 46, ENDERLEIN, Zool. Anz. xxviii.

Polyplax n. g. for part of *Hæmatopinus*, type *spinulosa* Burm., ENDERLEIN, p. 142, t. c.

Solenopotes n. g. p. 143, for *S. capillatus* n. sp., Leipzig, p. 144, ENDERLEIN, t. c.

Trichaulus n. g. p. 141, for *piliferus* Burm. etc., ENDERLEIN, Zool. Anz. xxviii.

(F.) *NEUROPTERA*, s. l.

TRICHOPTERA.

[Cf. BANKS (82-85, 87), Klapálek (817), MORTON (963), RIS (1175), SILFVENIUS (1293-1296), STITZ (1349), STRUCK (1351), THIENEMANN (1382-1384), ULMER (1417-1422).]

The morphology of the genitalia in various families, with numerous figures, Klapálek, pp. 161-197, v plates and illustrations, Bull. Ceska Ac. viii.

Male and female sexual organs, and their relations with those of *Microlepidoptera*, STITZ (1349).

Trichoptera larvæ using stems as cases, SILFVENIUS, pp. 147-150, cuts, Allg. Zeitschr. Ent. ix.

Cases in the light of protection and breathing for larva and pupa, THIENEMANN, Zool. Anz. xxvii, pp. 724-730.

Peculiar structure on abdomen of *Ecetis*, ? sense-organ, RIS, Vierteljahrschr. Ges. Zurich xlix, pp. 370-374, pl. xii.

Hydropsyche etc. attacking wood of bridges, SILFVENIUS, pp. 54-57, Medd. Soc. Faun. Fenn. 1902/03.

Adicella flicornis, early stages, MORTON, pp. 82-84, pl. i, Ent. Mag. xl.

Allotrichia signata, Washington, BANKS, p. 215, P. ent. Soc. Washington vi, n. sp.

A. maculata, Washington, BANKS, p. 116, Ent. News Philad. xv, n. sp.

Anabolia spinosa, Patagonia, ULMER, p. 11, Hamburg. Magalhaen. Reise vii, n. sp.

Bereca pullata, larva, ULMER, p. 286, Mt. Mus. Hamburg. xx, Beih. ii.

Cyrnus flavidus, pp. 7-10, pl. figg. 2, *C. insolutus*, pp. 10-12, pl. figg. 3, larvæ and pupæ, SILFVENIUS, Acta Soc. Faun. Fenn. xxvi, No. 2.

C. pallidus, Washington, BANKS, p. 214, P. ent. Soc. Washington vi, n. sp.

Dicosmoecus maculatus, New Mexico, BANKS, p. 107, Tr. Amer. ent. Soc. xxx, n. sp.

Dipseudopsis, trophi, ULMER, Zool. Anz. xxviii, p. 58, cuts.

Drusus discolor, case, THIENEMANN, p. 257, Allg. Zeitschr. Ent. ix.

Glossosoma nylanderii, characters of type, SILFVENIUS, p. 171, Medd. Soc. Faun. Fenn. 1902/03.

G. parvula, p. 108, *ventralis*, p. 109, New Mexico, BANKS, Tr. Amer. ent. Soc. xxx, n. spp.

Glyphopsyche n. g. near *Glyphotaxius*, *G. bryanti* n. sp., British Columbia, BANKS, p. 141, P. ent. Soc. Washington vi.

Halesus radiatus ♂ genitalia, ULMER, p. 283, Mt. Mus. Hamburg xx, Beih. ii.

H. taylora, Brit. Columbia, BANKS, p. 140, P. ent. Soc. Washington vi, n. sp.

Helicopsyche annulicornis, Washington, BANKS, p. 212, t. c. n. sp.

Holocentropus dubius, larva and pupa, SILFVENIUS, pp. 3-6, pl. figg. 1, Acta Soc. Faun. Fenn. xxvi, No. 2.

Hyalopsyche n. g. *Polycentropini*, p. 357, *H. palpata* n. sp., W. Africa, p. 358, ULMER, Zool. Anz. xxviii.

- Hydropsyche sexfasciata*, Cameroons, ULMER, p. 421, Arkiv Zool. i; *H. speciosa*, Washington, BANKS, p. 214, P. ent. Soc. Washington vi; *H. novamexicana*, New Mexico, BANKS, p. 110, Tr. Amer. ent. Soc. xxx: n. spp.
- Hydroptilides*, larvæ, pupæ and cases of 11 species, 6 of them previously unknown, SILFVENIUS, Acta Soc. Faun. Fenn. xxvi, No. 6, 38 pp., 2 pls.
- Hydroptila cintrana*, Portugal, MORTON, p. 324, Tr. ent. Soc. London 1904, n. sp.
- Leptocerus flavus*, Washington, BANKS, p. 212, P. ent. Soc. Washington vi, n. sp.
- Limnophilus ignavus*, larva and pupa, ULMER, p. 55, Allg. Zeitschr. Ent. ix.
- L. michaelsoni*, p. 7, *armatus*, p. 8, *patagonicus*, p. 9, *setipes*, p. 10, Patagonia, ULMER, Hamburg. Magalhaen. Reise vii, n. spp.
- Macronema sjostedti*, Cameroons, ULMER, p. 419, Arkiv Zool. i, n. sp.
- Mesophylax impunctatus*, metamorphoses, ULMER, pp. 57–59, Allg. Zeitschr. Ent. ix.
- Metanæa flavipennis*, metamorphoses, THIENEMANN, pp. 212–215, Allg. Zeitschr. Ent. ix.
- Mystacides nigra* and *longicornis*, pupæ, THIENEMANN, p. 261, t. c.
- Neuronia clathrata*, metamorphoses, STRUCK, pp. 2–7, Mt. Ges. Lubeck (2) xix.
- Nyctiophylax occidentalis*, W. Africa, ULMER, p. 355, Zool. Anz. xxviii, n. sp.
- Æstropsis bipunctata* ♂, ULMER, p. 413, Arkiv Zool. i.
- Orthotrichia pallida*, Washington, BANKS, p. 215, P. ent. Soc. Washington vi; *O. americana*, Washington, BANKS, p. 116, Ent. News Philad. xv: n. spp.
- Oxyethira mirabilis*, Scotland, MORTON, p. 327, Tr. ent. Soc. London 1904; *O. dorsalis*, Washington, BANKS, p. 216, P. ent. Soc. Washington vi: n. spp.
- Plectrotarsus*, trophi, ULMER, Zool. Anz. xxviii, p. 58, cuts.
- Polycentropinæ*, larvæ and pupæ, SILFVENIUS, p. 13, Acta Soc. Faun. Fenn. xxvi, No. 2.
- Potamorites biguttatus*, metamorphosis, THIENEMANN, pp. 258–261, Allg. Zeitschr. Ent. ix.
- Protomacronema* n. g. p. 416, *P. pubescens* n. sp., Cameroons, p. 417, ULMER, Arkiv Zool. i; *P. hyalinum*, W. Africa, ULMER, p. 354, Zool. Anz. xxviii, n. sp.
- Protoptila* for *Bereæ maculata* Hag., BANKS, p. 215, P. ent. Soc. Washington vi, n. sp.
- Psilopteryx*? *brevipennis*, New Mexico, BANKS, p. 108, Tr. Amer. ent. Soc. xxx, n. sp.
- Ptilocolepus granulatus*, habits, metamorphoses, taxonomy, THIENEMANN, pp. 418–424, Allg. Zeitschr. Ent. ix.
- Rhyacophila stigmatica*, New Mexico, BANKS, p. 108, Tr. Amer. ent. Soc. xxx, n. sp.
- Stactobia eatoniella*, larva, THIENEMANN, p. 261, Allg. Zeitschr. Ent. ix.
- Stenophylax branchiatus*, p. 17, *S. ? appendiculatus*, p. 19, Patagonia, ULMER, Hamburg. Magalhaen. Reise vii, n. spp.

NEUROPTERA-PLANIPENNIA (incl. PANORPIDÆ).

- [Cf. BANKS (81, 82), CURRIE (334, 335), FROGGATT (557, 562), KEMPNY (785, 1232), KIRBY (806), NAVÁS (974–976), WEELE (1501), XAMBEU (1539).]

HEMEROBIIDÆ and PANORPIDÆ.

- Acanthaclisis maclachlani*, N. W. Australia, VAN DER WEELE, p. 210, Notes Leyden Mus. xxiv, n. sp.
- Albardia furcata*, characters, WEELE, p. 203, t. c.
- Ascalaphus immaculatus*, the type, WEELE, p. 204, t. c.; *A. maculatus* type, is *niger* Borkh., WEELE, p. 167, t. c.; *A. ictericus* and *meridionalis*, larva and habits, XAMBEU, pp. 121, 123, Ann. Soc. Linn. Lyon l.
- Berotha piepersii*, Java, WEELE, p. 214, Notes Leyden Mus. xxiv, n. sp.
- Brachynemurus elongatus*, New Mexico, BANKS, p. 105, Tr. Amer. ent. Soc. xxx, n. sp.
- Chasmatoptera sheppardi*, Asia Minor, KIRBY, p. 60, Ann. Nat. Hist. xiv, n. sp.
- Chrysopa vulgaris* var. n. *radialis*, p. 119, *nigricostata* var. n. *marginata*, p. 120, *C. inornata*, full description, p. 124, NAVÁS, Bol. Soc. Aragon. iii; *C. vulgaris*, larva, XAMBEU, pp. 215-217, Ann. Soc. Linn. Lyon l.
- C. iberica*, Moncayo etc., NAVÁS, p. 99, Bol. Soc. Aragon. ii; *C. cosmeta*, Madrid, NAVÁS, p. 125, op. cit. iii; *C. jaluítana*, Marshall Islands, KEMPNY, p. 403, Zool. Jahrb. Syst. xx; *C. jaluítana*, Marshall Islands, p. 353, *vicina*, Australia, p. 354, KEMPNY, Verh. Ges. Wien liv : n. spp.
- Cordulecerus inquinatus*, adult, WEELE, p. 205, Notes Leyden Mus. xxiv.
- Croce attenuata*, Queensland, pl. xx, fig. 1, p. 675, FROGGATT, P. Linn. Soc. N. S. Wales 1904, n. sp.
- Cymothalis liberiensis*, W. Africa, WEELE, p. 212, Notes Leyden Mus. xxiv, n. sp.
- Helicomitus philippinensis*, Luzon, WEELE, p. 206, t. c. n. sp.
- Hemerobius dyari*, p. 85, *kokaneanus*, p. 86, *caudelli*, p. 87, *glacialis*, *kootenayensis*, p. 88, British Columbia, CURRIE, P. ent. Soc. Washington vi; *H. transversus*, *nevadensis*, *dorsatus*, p. 61, *pictus*, *speciosus*, p. 62, U. S. N. Amer., BANKS, Canad. Ent. xxxvi; *H. angustus*, New Mexico, BANKS, p. 102, Tr. Amer. ent. Soc. xxx; *H. bistrigatus*, p. 79, *pallescens*, p. 80, California, CURRIE, P. ent. Soc. Washington vi : n. spp.
- Hybris flavicans*, Sumatra, p. 208, *borneënsis*, Borneo, p. 209, WEELE, Notes Leyden Mus. xxiv, n. spp.
- Merope tuber*, note, BARBER, p. 50, P. ent. Soc. Washington vi.
- Micromus australis*, N. S. Wales, FROGGATT, p. 609, plate, Agric. Gaz. N. S. W. xv, n. sp.
- Myrmeleon arenarius*, *ochreatus*, figg. 1, 2, pl. iv, NAVÁS, Bol. Soc. Aragon. iii; *M. formicarius*, *formicaleo*, in Holland, WEELE, pp. 110, 111, Ent. Ber. Nederland. i; *M. bifasciatum*, *sinuatum*, examination of types, WEELE, pp. 167, 168, Notes Leyden Mus. xxiv; *M.*, the Spanish, pp. 21-24, pl. i, *M. arenarius* n. n. for *variegatus* Ramb. nec Klug, p. 22, NAVÁS, Butl. Inst. Catalan. i.
- M. ochreatus*, Spain, NAVÁS, p. 23, t. c.; *M. distichus*, p. 106, *sticticus*, p. 107, Spain, NAVÁS, Bol. Soc. Aragon. ii : n. spp.
- Panorpa meridionalis* var. n. *fenestrata*, NAVÁS, p. 101, t. c.
- Psammoleon inscriptus* Hag., BANKS, p. 106, Tr. Amer. ent. Soc. xxx.
- Theleproctophylla variegata* Klug and *barbara* L. are distinct species, WEELE, pp. 95-98, Notes Leyden Mus. xxv.
- Ulula præcellens* to *Cordulecerus*, WEELE, p. 205, t. c.

PSEUDO-NEUROPTERA.

PSOCIDÆ.

[Cf. BANKS (82, 87), ENDERLEIN (454, 455), REUTER (1161), RIBAGA (1171).]

Psocoptera, new ordinal name for *Psocidæ*, SHIPLEY, p. 261, Zool. Anz. xxvii. Interpretation of the stigma, ENDERLEIN, p. 111, Zool. Jahrb. Syst. xx.

Calopsocus infelix, wings etc., ENDERLEIN, p. 106, pl. vii, fig. 1, op. cit. xix. *Edipsocus*, forms in Finland, pp. 5-8, *E. hyalinus* var. n. *abdominalis*, p. 6,

REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Ectopsocus and *Micropsocus*, *E. briggsi* var. n. *meridionalis*, RIBAGA, pp. 294-298, Redia i.

Hemineura fusca, Finland, pl. ii, fig. 2, p. 3, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9, n. sp.

Leptocella gracilis, New Mexico, BANKS, p. 110, Tr. Amer. ent. Soc. xxx, n. sp.

Leptodella n. n. for *Leptella* Reut. p. 11, characters and peculiarities, pp. 8-14, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Leptosocus, characters amended, REUTER, pp. 18-20, t. c.

Nymphopsocus destructor, account of, ENDERLEIN, pp. 727-732, pl. xliii, Zool. Jahrb. Syst. xix; *N. destructor*, characters, pp. 20-22, pl. iii, figg. 1-3, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Psocus bisignatus, *elegans*, N. America, BANKS, p. 203, P. ent. Soc. Washington vi; *P. cockerelli*, New Mexico, BANKS, p. 100, Tr. Amer. ent. Soc. xxx: n. spp.

Psyllipsocus ramburi, characters, REUTER, pp. 22-25, pl. iii, figg. 4-8, Acta Soc. Faun. Fenn. xxvi, No. 9.

Reuterella, characters and species, REUTER, pp. 16-18, t. c.; *R. helvimacula* var. n. *enderleini*, SCHILLE, p. 475, Zool. Anz. xxvii.

Sva n. g. p. 109, near *Perientomum*, *S. dahliana* n. sp., Bismarck Archipelago, p. 110, ENDERLEIN, Zool. Jahrb. Syst. xx.

MALLOPHAGA.

[Cf. CARRIKER (247), KELLOGG & CHAPMAN (784).]

Lipoptera n. n. for *Mallophaga*, SHIPLEY, p. 261, Zool. Anz. xxvii.

Fresh identification of mouth-parts of *Læmobothrium*, WATERHOUSE, p. v, cut, P. ent. Soc. London 1904.

Mallophaga of Costa Rica, with some general notes, CARRIKER, Stud. Univ. Nebraska iii.

KELLOGG's & CHAPMAN's memoir on Hawaiian *Mallophaga* (1902) is reprinted in Fauna Hawaiiensis iii, pp. 305-321, pl. x.

Colpocephalum osborni var. n. *costaricense*, p. 172, CARRIKER, Stud. Univ. Nebraska iii.

C. gypagi, pl. vi, fig. 2, p. 171, *extraneum*, fig. 3, p. 173, *luroris*, fig. 4, p. 174, *mirabile*, fig. 5, p. 175, Costa Rica, CARRIKER, t. c. n. spp.

Docophorus platystomus umbrosus var. n. p. 126, CARRIKER, t. c.

D. transversifrons, p. 127, pl. i, fig. 1, *bruneri*, p. 128, fig. 2, *underwoodi*, p. 130, fig. 3, *cancellatus*, p. 132, fig. 4, Costa Rica, CARRIKER, t. c. n. spp.

Goniocotes eurysema, Costa Rica, pl. iii, fig. 6, p. 150, CARRIKER, t. c. n. sp. *Goniodes minutus*, pl. iv, figg. 1, 2, p. 155, *aberrans*, figg. 4, 5, p. 157, Costa

Rica, CARRIKER, t. c. n. spp.

Kelloggia n. g. p. 153, *brevipes* n. sp. pl. i, fig. 2, p. 154, on *Tinamus*, Costa Rica, CARRIKER, t. c.

- Læmobothrium delogramma*, pl. iv, fig. 6, p. 159, *oligothrix*, fig. 7, p. 161, Costa Rica, CARRIKER, t. c. n. spp.
Lipeurus longipes tinami var. n. p. 146, CARRIKER, t. c.
L. postmarginatus, pl. iii, fig. 4, p. 147, Costa Rica, CARRIKER, t. c. n. sp.
Menopon tridens costaricense var. n. p. 178, *M. præcursor meridionale* var. n. p. 180, *M. thoracicum* varr. n. *majus* and *fuscum*, p. 187, CARRIKER, t. c.
M. ortalidis, pl. vii, fig. 1, p. 179, *macrocybe*, fig. 2, p. 181, *tityrus*, fig. 4, p. 182, *stenodesmum*, pl. viii, fig. 2, p. 184, *difficile*, fig. 1, p. 188, *palloris*, fig. 3, p. 189, *laticorpus*, p. vii, fig. 5, p. 190, Costa Rica, CARRIKER, t. c. n. spp.
Nirmus fuscus epustulatus var. n. p. 133, *N. brachythorax ptiliogonis* var. p. 143, CARRIKER, t. c.
N. rhampasti, p. 135, pl. ii, fig. 1, *hastiformis*, fig. 2, p. 136, *parabolocycle*, fig. 3, p. 137, *francisi*, fig. 5, p. 139, *melanacocus*, fig. 6, p. 141, *pseudophæus*, pl. iii, fig. 1, p. 142, *caligineus*, fig. 2, p. 144, Costa Rica, CARRIKER, t. c. n. spp.
Nitzschia bruneri, p. 177 with var. *meridionalis*, p. 178, Costa Rica, CARRIKER, t. c. n. sp.
Ornicholax n. g. robustus n. sp. on *Tinamus*, Costa Rica, pl. ix, fig. 1, p. 161, CARRIKER, t. c.
Physostomum jiminezi, pl. v, fig. 1, p. 163, *doratophorum*, fig. 4, p. 165, *leptosomum*, fig. 2, p. 166, *subangulatum*, fig. 3, p. 168, Costa Rica, CARRIKER, t. c. n. spp.

TERMITIDÆ or ISOPTERA.

- [Cf. DESNEUX (368-373), JACOBSON (741), SILVESTRI (1299), SJÖSTEDT (1301), WASMANN (1485, 1487), WHEELER (1524).]
The classification and genera of *Termitidæ*, with list of the species, DESNEUX, *Isoptera*, in Wytsman Gen. Ins. fasc. xxv, 52 pp., 2 pls.
Classification of *Termitidæ*, the family of itself to form the Order *Isoptera*, three subfamilies, DESNEUX, Ann. Soc. ent. Belgique xlviii, pp. 278-286.
Note on the taxonomy of *Termitidæ*, DESNEUX, pp. 149, 150, t. c.
DESNEUX & WASMANN (370, 371, 1487) discuss the phylogeny of *Termitidæ*.
Phylogeny and relations of Termites, WHEELER (1524).
Notes on *Termitidæ* at Tortosa, Spain, JAIME PUJURLA, Bol. Soc. Aragon. Ci. nat. iii, pp. 23 etc. etc.
Supplement to the monograph of African *Termitidæ*, with additional tables and descriptions of forms, habits etc. and 26 n. spp., SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4.
Habits of *Hodotermes* in Turkestan, JACOBSON, Annuaire Mus. St. Petersb. ix, pp. 57-107, and WASSILJEV, pp. 97 etc.
Brief and unimportant note on Termites in Rhodesia, LOIR, p. 90, P. Rhodesia Ass. iii.
Habits of S. American *Termitidæ*, SILVESTRI, Mem. Soc. Ant. Alzate xiii, pp. 353-378.
The two kinds of nymphs, PÉREZ (1022).
Termitidæ at water 50 metres below the surface, ELLIOT, Geograph. J. xxiv, p. 515.
Anacanthotermes subg. n. cf. *Hodotermes*.
Archotermopsis subg. n. *T. wroughtoni* (below), DESNEUX, p. 13, *Isoptera*.
Calotermes marginalis in Turkestan, JACOBSON, pp. 72 etc., Annuaire Mus. St. Petersb. ix.
C. desneuvi, Madagascar, p. 11, *maroccoensis*, Tangier, *planiceps*, S. Africa,

- p. 17, *auriceps*, Cameroons, p. 19, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4; *C. militaris*, Ceylon, DESNEUX, p. 146, Ann. Soc. ent. Belgique xlviii; *C. wagneri*, Brazil, DESNEUX, p. 286, t. c. : **n. spp.**
- Eutermes sudanicus*, Soudan, p. 77, *palearcticus*, Algeria, p. 79, *chiasognathus*, Cameroons, p. 85, *salebrithorax*, Madagascar, p. 89, *mobilis*, Soudan, p. 91, *occidentalis*, Kerry Coast, p. 93, *divellens*, Madagascar, p. 94, *aluco*, Soudan, p. 95, *rapulum*, p. 99, *usambarensis*, p. 103, Usambara, *maculiventris*, Gaboon, p. 104, *clepsydra*, Madagascar, p. 108, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4 : **n. spp.**
- Hodotermes vagans septentrionalis* subsp. n., JACOBSON, p. 65, Annuaire Mus. St. Petersb. ix.
- H. (Anacanthotermes)* subg. n. p. 76) *turkestanicus*, p. 61, *ahngerianus*, p. 67, JACOBSON, t. c. **n. spp.**
- Mastotermes*, characters and importance, DESNEUX, pp. 279–281, Ann. Soc. ent. Belgique xlviii, and WASMANN, t. c.
- Rhinotermes taurus*, Surinam, DESNEUX, p. 146, t. c. **n. sp.**
- Termes lucifugus*, swarming at Bordeaux, LALOY, p. 131, Naturaliste 1904; *T. havilandi* n. n. for *latifrons* Hav. nec Sjöst., DESNEUX, p. 151, Ann. Soc. ent. Belgique xlviii; *T. desertorum*, worker and imago, DESNEUX, p. 147, t. c.
- T. canalifrons*, p. 47, Madagascar, *fidens*, West Africa, p. 52, *aurora*, Zanzibar, p. 60, *agilis*, Liberia, p. 61, *fuscofemorialis*, Red Sea, p. 62, *ramulosus*, E. Africa, p. 64, *salebrifrons*, N. E. Africa, p. 65, *erodens*, Red Sea, p. 66, *redenianus*, Usambara, p. 68, *tragardhi*, Soudan, p. 71, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4; *T. annamensis*, Annam, *zenkeri*, Cameroons, DESNEUX, p. 148, Ann. Soc. ent. Belgique xlviii; *T. bouvieri*, Maraquitia, p. 287, *tenuirostris*, Mexico, p. 288, DESNEUX, t. c. : **n. spp.**
- Termitogeton* subg. n. for *T. planus* Hav., DESNEUX, p. 374, t. c.
- Termopsis wroughtoni*, Kashmir, DESNEUX, p. 445, J. Bombay Soc. xv, **n. sp.**

EMBIIDÆ = EMBIOPTERA.

- [Cf. FROGGATT (557), KUSNEZOV (850), LÉGER (870), VERHOEFF (1434), WASMANN (1485).]
- Embioptera* new ordinal n. for *Embiidæ*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- Anatomy and taxonomy of *Embiidæ*, treating them as suborder nov.
- Adenopoda* of *Isoptera*, VERHOEFF, Acta Ac. German. lxxxii, No. 2, 65 pp., 4 pls.
- The affinities of *Embiidæ* from a consideration of their parasites, LÉGER, pp. 365, 366, Arch. Protistenk. iii.
- Embia taurica*, habits, taxonomy etc., KUSNEZOV, pp. 138–173, Horæ Soc. ent. Ross. xxxvii.
- E. camerunensis*, W. Africa, VERHOEFF, p. 203, Acta Ac. German. lxxxii, **n. sp.**
- Euembia* subg. n. for *Embia*, male-winged species, VERHOEFF, t. c. p. 201.
- Haploembia* subg. n. for *E. solieri*, VERHOEFF, t. c. p. 201.
- Oligotoma* ? *termitophila*, Soudan, WASMANN, pl. i, fig. 6, p. 17, Jägerskiöld exp. No. 13; *O. gurneyi*, pl. xx, figg. 2, 3, p. 672, *agilis*, figg. 4, 6, p. 673, New South Wales, FROGGATT, P. Linn. Soc. N. S. Wales 1904, **n. spp.**

PERLIDÆ or PLECOPTERA.

- [Cf. BANKS (82), KŁAPÁLEK (818), NAVÁS (974).]
- Patagonian *Perlida*, KŁAPÁLEK, Hamburg. Magalhaen. Reise vii, 13 pp.

- Acroneuria nigrita*, New Mexico, BANKS, p. 98, Tr. Amer. ent. Soc. xxx, n. sp.
Arcynopteryx n. g. for part of *Dictyopteryx*, Klapálek, p. 7, Rozp. Ceske Ak. Praise ii, xiii, No. 17.
Chloroperla pallidula, New Mexico, BANKS, p. 99, Tr. Amer. ent. Soc. xxx, n. sp.
Dictyogenus subg. n. for *D. alpina* etc., Klapálek, p. 8, Rozp. Ceske Ak. Praise ii, xiii, No. 17.
Dictyopterygella n. subg. p. 5, *D. septentrionis* n. sp., Siberia, p. 6, Klapálek, t. c.
Gripopteryx revised, Klapálek, Hamburg. Magalhaen. Reise vii.
G. tigrina, Peru, p. 11, *michaelsen*, Tierra-del-fuego, p. 12, id. t. c. n. spp.
Isogenus nubecula, nymph, structure, Klapálek, pp. 8-10, Rozp. Ceske Ak. Praise ii, xiii, No. 17.
Teniopteryx ornata, p. 102, *dusmeti*, p. 104, *matritensis*, p. 105, Spain, NAVÁS, Bol. Soc. Aragon. ii, n. spp.

EPHEMERIDÆ.

- [Cf. NAVÁS (974), REITZENSTEIN (1157), ULMER (1423).]
Ephemeroptera new ordinal n. for *Ephemeridæ*, SHIPLEY, p. 261, Zool. Anz. xxvii.
Agnatha Meinert = (*Plectoptera* Pack.) to be used for this Order, BÖRNER, p. 525, Zool. Anz. xxvii.
The terms *Plectoptera*, *Anisoptera* and *Ephemeroptera*, BANKS, p. 155, Science xx.
ULMER gives notes on *Leptophlebia*- and *Baëtis*-like nymphs from Patagonia, Hamburg. Magalhaen. Reise vii.
Ephemeridæ re-entering water, SLADE, p. 15, Ent. Mag. xl.
Permian *Ephemeridæ*, new forms, see p. 125, Palæo-entomology, HANDLIRSCH.
Swarms of a may-fly, SMITH, p. 318, Ent. News Philad. xv.
Baëtis propinquus, relations of sexes, MOORE, p. 289, Ent. News Philad. xv.
Ephemera virgo in Saône-et-Loire, MARCHAL, pp. 260-262, Bull. Soc. Autun xv.
E. hispanica, Burgos, NAVÁS, p. 100, Bol. Soc. Aragon. ii, n. sp.

ODONATA or PARANEUROPTERA.

- [Cf. BUTLER (211), CALVERT (220), CURRIE (336), FÖRSTER (536), HANDLIRSCH (662), HEYMONS (683), LUCAS (890), MARTIN (919), NEEDHAM (978), PIERRE (1087), RIS (1176), SLEVOGT (1305), WILLIAMSON (1531, 1532).]
Paraneuroptera new ordinal name for *Odonata*, SHIPLEY, p. 261, Zool. Anz. xxvii.
The terms *Archiptera*, *Pseudoneuroptera*, *Paraneuroptera*, BANKS, p. 155, Science xx.
WILLIAMSON revises the *Calopteryginæ* of Burma and Lower Siam, 12 genn. and 21 species, gives the characters of genera and species, some figures and synonymy and describes 1 n. sp., P. U. S. Mus. xxviii, No. 1389, pp. 165-187.
The *Odonata*-fauna of southern S. America, RIS, Hamburg. Magalhaen. Reise vii.
List of *Odonata* of Indo-China, MARTIN, pp. 204-221, Mission Pavie iii.
The morphology of abdomen and its appendages, larva and imago, HEYMONS (683), HANDLIRSCH (662).

- HORTENSE BUTLER gives the results of a study of the labium in the young and adult, *Tr. Amer. ent. Soc.* xxx, pp. 111-134, pls. ii-vii.
- Eyes of *Æschna*, VIGIER (1456).
- NEEDHAM describes 40 nymphs, of which 36 for the first time, most of them being figured; they are chiefly American with about eight Batavian, *P. U. S. Mus.* xxvii, pp. 685-720, pls. xxxviii-xliv.
- Hatching of *Lestes viridis*, PIERRE, pp. 477-484, pl. iv, *Ann. Soc. ent. France* 1904.
- Acanthagrion ambiguum*, Buenos Aires, RIS, p. 13, Hamburg. Magalhaen. Reise vii, **n. sp.**
- Æschna cornigera* and allies, characters, RIS, p. 23, t. c.; *A. grandis*, habits, SLEVOGT, p. 37, *Soc. ent.* xix.
- Agrion armatum*, characters, LUCAS, p. 33, pl. iii, figg. 2-5, *Entomologist* 1904.
- Allopetalia reticulosa*, characters, cuts, RIS, pp. 21-23, Hamburg. Magalhaen. Reise vii.
- Amphiaschna grubaueri*, Malacca, FÖRSTER, p. 355, *Ins. Börse* 1904, **n. sp.**
- Anthagrion* **n. g.** type *Agrion gayi*, RIS, p. 7, Hamburg. Magalhaen. Reise vii.
- Azuma* **n. g.** for *Epophthalmia elegans* Br., NEEDHAM, p. 698, *P. U. S. Mus.* xxvii.
- Cordulia ænea*, natural history notes, copula, ROCQUIGNY-ADANSON, *Rev. Sci. Bourbonnais* xvii, pp. 128, 129.
- Davidius fruhstorferi*, Tonkin, MARTIN, p. 215, *Mission Pavie* iii, **n. sp.**
- Dysphea basitincta*, Tonkin, MARTIN, p. 218, t. c. **n. sp.**
- Echo maxima*, Tonkin, MARTIN, p. 219, t. c. **n. sp.**
- Gomphidia krugeri*, Tonkin, MARTIN, p. 216, t. c. **n. sp.**
- Gomphus thomassoni* to *Onychogomphus*, characters, MARTIN, p. 213, t. c.; *G. furcifer*, nymph; WALKER, p. 358, *Canad. Ent.* xxxvi.
- G. vernicularis*, Tonkin, MARTIN, p. 214, *Mission Pavie* iii, **n. sp.**
- Hagenius gigas*, Tonkin, MARTIN, p. 216, t. c. **n. sp.**
- Heterogomphus unicolor*, Siam, MARTIN, p. 211, t. c. **n. sp.**
- Ischnura elegans* var., F. & H. CAMPION, p. 252, *Entomologist* 1904.
- Lestes viridis*, ♂ appendages, LUCAS, p. 33, pl. iii, fig. 6, *Entomologist* 1904; *L. viridis*, emergence from egg, young larva, PIERRE, p. 30, *Bull. Soc. ent. France* 1904, GIARD, t. c. p. 31.
- Macromia septima* Selys, Java and Tonkin, MARTIN, p. 211, *Mission Pavie* iii, ? **n. sp.**
- Merogomphus* **n. g.** *paviei* **n. sp.**, Tonkin, MARTIN, p. 214, t. c.
- Micrathyria berenice*, nymph, CALVERT, p. 174, *Ent. News Philad.* xv.
- M. pallida*, Brazil, NEEDHAM, p. 710, *P. U. S. Mus.* xxvii, **n. sp.**
- Neurothemis septentrionis*, Sikkim, FÖRSTER, p. 363, *Ins. Börse* 1904, **n. sp.**
- Onychogomphus camelus*, Tonkin, MARTIN, p. 212, *Mission Pavie* iii, **n. sp.**
- Onychothemis abnormis* var. *n. tonkinensis*, MARTIN, p. 209, t. c.
- O. culminicola*, Upper Malacca, FÖRSTER, p. 362, *Ins. Börse* 1904, **n. sp.**
- Orolestes octomaculata*, Cambodia, MARTIN, p. 220, *Mission Pavie* iii, **n. sp.**
- Oxyagrion saliceti*, Buenos Aires, RIS, p. 9, Hamburg. Magalhaen. Reise vii, **n. sp.**
- Pseudothemis jorina*, Upper Malacca, FÖRSTER, p. 363, *Ins. Börse* 1904, **n. sp.**
- Psolodesmus dorothea*, Formosa, WILLIAMSON, p. 249, cuts, *Ent. News Philad.* xv, **n. sp.**
- Thaumatoneura pellucida*, Costa Rica, CALVERT, p. 216, *Ent. News Philad.* xv, **n. sp.**
- Trithemis aurora*, *minuscule*, wings, NEEDHAM, pl. xlv, p. 709, *P. U. S. Mus.* xxvii.

THYSANOPTERA.

[Cf. BÖRNER (157), DANIEL (350), FROGGATT (556).]

The *tropi*, relations with *Hemiptera*, BÖRNER (157).

Caliothrips n. g. p. 296, *C. woodworthi* n. sp., California, p. 297, DANIEL, Ent. News Philad. xv.

Criptothrips californicus, S. California, DANIEL, p. 293, t. c. n. sp.

Euthrips pyri, San Leandro, DANIEL, p. 294, t. c. n. sp.

Idolothrips, habits, life-history, eggs, *I. spectrum* ♀ = (*marginata* Hal.), *spectrum* ♂ var. = (*lacertina* Hal.), FROGGATT, P. Linn. Soc. N. S. Wales xxix, pp. 54-57, pl. iii.

Sericothrips apteris, Berkely, DANIEL, p. 295, Ent. News Philad. xv, n. sp.

(G.) *APTERA* or *THYSANURA* and
COLLEMBOLA.

[Cf. BRUNTZ (196), ESCHERICH (1485), FOLSOM (522), Klapálek (816), PHILIPTSCHENKO (1045), SILVESTRI (1297, 1300).]

Aptera, as ordinal name for *Thysanura*, SHIPLEY, Zool. Anz. xxvii, p. 261.
Atelura sudanensis, White Nile, ESCHERICH, p. 20, Jägerskiöld exp. No. 13,
n. sp.

Campodea, anatomy, PHILIPTSCHENKO (1045).

Diptura n. order for *Thysanura entotropha* Grassi, BÖRNER, p. 525, Zool.
Anz. xxvii.

Japyx solifugus, in Crimea, KUSNEZOV, p. 227, Rev. Russe Ent. iv.

J. sharpi, Kauai, SILVESTRI, p. 293, pl. viii, figg. 1, 2, Fauna Hawaiiensis
iii, n. sp.

Lepisma hawaiiensis, Kauai, SILVESTRI, p. 296, pl. viii, fig. 19, t. c. n. sp.

Machilidae, tabulation, SILVESTRI, pp. 4-9, Redia ii.

Machiloides n. g. for *Machilis appendiculata*, SILVESTRI, p. 4, t. c.

Machilis alternata, Umbria, SILVESTRI, p. 6, t. c.; *M. perkinsi*, Kauai,
p. 294, *heteropus*, Kauai, Hawaii, p. 295, SILVESTRI, Fauna Hawaiiensis
iii : n. spp.

Præmachilis meticulosa, Umbria, SILVESTRI, p. 7, Redia ii, n. sp.

COLLEMBOLA.

[Cf. ABSOLON (6, 7), AGREN (18), AXELSON (68, 68A), CARPENTER (243),
CARPENTER & EVANS (245), HOFFMANN (694), SCHÖTT (1234).]

Apontoptera n. n. for *Collembola*, SHIPLEY, p. 261, Zool. Anz. xxvii.

Synaptera and *Collembola*, the terms, BANKS, p. 155, Science xx.

Notes on variation, etc., of a Norwegian coll. of *Collembola*, AXELSON,
pp. 65-84, Ent. Tidskr. xxv.

Antennal and postantennal organ, ABSOLON, pp. 83-89, Vestnik. Klub.
Prostejove iii.

Structure and function of ventral tube, cephalic glands, HOFFMANN, pp. 87-
116, Zool. Anz. xxviii.

Achorutes spp., post-antennary organ, SCHÖTT, pl. i, pp. 5-10, Bih. Svenska
Ak. xxviii, Afd. iv, No. 2.

A. propinquus, Edinboro, CARPENTER & EVANS, p. 217, pl. iv, figg. 10-14,
P. Phys. Soc. Edinb. xv; *A. bengtssoni*, p. 2, figg. 1-4, *serratus*, p. 5,
figg. 5-7, *mitis*, p. 6, Lapland, AGREN, Arkiv Zool. ii, No. 1 : n. spp.

Anurida amorita in Siberia, AXELSON, p. 4, Ofv. Finska Forh. xlv, No. 20.

Dicyrtoma pygmaea var. n. *purpurea*, ABSOLON, p. 61, Vestnik. Klub.
Prostejove ii; *D. palmata* in Siberia, AXELSON, p. 12, fig. 7, Ofv.
Finska Forh. xlv, No. 20.

D. violacea, Moravia, ABSOLON, p. 61, Vestnik. Klub. Prostejove ii, n. sp.

Entombrya nivalis ab. n. *dorsalis*, AGREN, p. 22, figg. 14-16, Arkiv Zool. ii,
No. 1.

- E. insularis*, Hawaii, pl. ix, figg. 7-11, *kalakaua*, Kauai, figg. 12-16, p. 301, CARPENTER, Fauna Hawaiiensis iii, **n. spp.**
- Friesea*, characters, SCHÖTT, p. 17, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.
- Heteromurus hirsutus*, Moravia, ABSOLON, p. 62, Vestnik. Klub. Prostejove ii, **n. sp.**
- Isotoma grandiceps*, amended characters, AXELSON, p. 7, Ofv. Finska Forh. xlv, No. 20; *I. bidenticulata*, characters, p. 17, figg. 11-13, AGREN, Arkiv Zool. ii, No. 1; *I. anophthalma*? unpigmented form, p. 69, *I. mucronata* Axels., a valid species, characters, pp. 72-74, AXELSON, Ent. Tidskr. xxv.
- I. intermedia*, Sweden, SCHÖTT, p. 25, Bih. Svenska Ak. xxviii, Afd. iv, No. 2; *I. poppiusi*, Siberia, AXELSON, p. 5, pl. figg. 1-4, Ofv. Finska Forh. xlv, No. 20; *I. perkinsi*, Kauai, pl. ix, figg. 17-19, p. 302, CARPENTER, Fauna Hawaiiensis iii : **n. spp.**
- Lepidocyrtus lanuginosus* ab. n. *rubiginosa*, AGREN, p. 25, Arkiv Zool. ii, No. 1.
- L. ruber*, Sweden, SCHÖTT, p. 31, Bih. Svenska Ak. xxviii, Afd. iv, No. 2; *L. heterophthalmus*, Hawaii, pl. ix, fig. 1, p. 300, CARPENTER, Fauna Hawaiiensis iii : **n. spp.**
- Neanura ornata* in Siberia, AXELSON, p. 3, Ofv. Finska Forh. xlv, No. 20.
- N. citronella*, Hawaiian islds., pl. ix, figg. 20-27, p. 303, CARPENTER, Fauna Hawaiiensis iii, **n. sp.**
- Onychiurus arcticus* is ab. of *armatus*, AGREN, p. 13, Arkiv Zool. ii, No. 1.
- Papirius rufescens* var. n. *discolor*, SCHÖTT, p. 41, pl. v, figg. 1-5, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.
- Pseudachorutes lapponicus*, Lapland, AGREN, p. 8, fig. 8, Arkiv Zool. ii, No. 1; *P. tuberculatus*, p. 13, *borneri*, p. 14, Sweden, SCHÖTT, Bih. Svenska Ak. xxviii, Afd. iv, No. 2 : **n. spp.**
- Pseudosinella sexoculata*, Sweden, SCHÖTT, p. 34, pl. iv, figg. 8-12, t. c. **n. sp.**
- Schafferia* [n. g., but previously published in 1900] p. 89, *S. emucronata*, Moravia [n. sp. previously described], ABSOLON, p. 91, pl. i, figg. 1-13, Vestnik. Klub. Prostejove iii.
- Schottiella crassicornis*, p. 10, pl. ii, figg. 8-12, *sensibilis*, p. 11, figg. 13-20, Sweden, SCHÖTT, Bih. Svenska Ak. xxviii, Afd. iv, No. 2, **n. spp.**
- Sminthurus variegatus*?, Siberia, AXELSON, p. 9, Ofv. Finska Forh. xlv, No. 20.
- Tetrachantella*, characters and position, SCHÖTT, pp. 18-20, pl. iii, figg. 12, 13, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.

(H.) ORTHOPTERA.

Phagocytic organs, morphology, DAWYDOFF (354-357).

Synopsis of Orthoptera of Western Europe, BURR (202).

New Permian *Orthoptera*, see p. 125, Palæoentomology, HANDLIRSCH.

FORFICULIDÆ.

[Cf. BENNETT (100), BORELLI (153, 154), BORG (156), BURR (201), CAUDELL (254, 255), DISTANT (382), MjöBERG (950), REHN (1128).]

General catalogue, KIRBY (806A).

Natural history of *Anisolabis maritima*, BENNETT, *Psyche* xi, pp. 47-53.

Ancistrogaster pæcilocera, Cameroons, BORG, p. 576, pl. xxvi, fig. 8, *Arkiv Zool.* i, n. sp.

Anechura schlagintweitii, Tibet, BURR, p. 313, *Tr. ent. Soc. London* 1904, n. sp.

Anisolabis azteca (= *bormansi* Scudd.), CAUDELL, p. 180, *J. N. York Ent. Soc.* xii.

A. gaudens, India, *albovittata*, Madagascar, BURR, p. 291, *Tr. ent. Soc. London* 1904; *A. peregrina*, in Sweden imported from Matto Grosso, MjöBERG, p. 131, *Ent. Tidskr.* xxv; *A. festæ*, Ecuador, BORELLI, p. 3, *Boll. Mus. Torino* xix, No. 475: n. spp.

Apterygida athymia n. n. for *Forfic. japonica* De B., REHN, p. 540, *P. U. S. Mus.* xxvii; *A. huseinæ* to *Labidura*, REHN, p. 539, t. c.; *A. linearis*, use of forceps, BAER, p. 163, *Bull. Soc. ent. France* 1904.

A. bonchampsii, Abyssinia, p. 317, *vishnu*, Darjiling, p. 318, BURR, *Tr. ent. Soc. London* 1904, n. spp.

Auchenomus minor, Philippines, CAUDELL, p. 108, *J. N. York Ent. Soc.* xii, n. sp.

Bormansia impressicollis ♂, BURR, p. 287, *Tr. ent. Soc. London* 1904.

B. meridionalis, Transvaal, BURR in DISTANT, *Ins. transvaal.* i, p. 97, n. sp.

Brachylabis sjostedi, Cameroons, BORG, p. 568, *Arkiv Zool.* i; *B. malgacha*, Madagascar, BURR, p. 292, *Tr. ent. Soc. London* 1904: n. spp.

Carcinophora waddyi, Martinique, BURR, p. 290, t. c.; *C. fusca*, Santiago, BORELLI, p. 1, *Boll. Mus. Torino* xix, No. 475: n. spp.

Chatospania volcana, Madagascar, BURR, p. 301, *Tr. ent. Soc. London* 1904, n. sp.

Challia n. g. near *Anataëlia*, p. 285, *C. fletcheri* n. sp., China, p. 286, BURR, t. c.

Chelidura dilatata, copula and egg, XAMBEU, pp. 120, 121, *Ann. Soc. Linn. Lyon* l.

Chelisoches beelzebub to *Forficula*, characters amended, BURR, p. 322, *Tr. ent. Soc. London* 1904.

C. limbatus, Cameroons, BORG, p. 575, pl. xxvi, fig. 7, *Arkiv Zool.* i, n. sp.

Demogorgon longipennis, Tucuman, BORELLI, p. 4, *Boll. Mus. Torino* xix, No. 479, n. sp.

- Diplatys aethiops*, hab. ♀, *occidentalis*, W. Indies, p. 280, *conradti*, Cameroons, *viator*, Madagascar, *siva*, India, p. 283, *croixi*, Malacca, p. 284, *greeni*, Ceylon, p. 285, BURR, Tr. ent. Soc. London 1904, **n. spp.**
- Forcipula quelchi*, Brit. Guiana, BURR, p. 289, t. c. **n. sp.**
- Forficula planicollis* ♂, p. 320, BURR, t. c.
- F. mikado*, Japan, p. 319, *ambigua*, *mogul*, p. 321, Darjiling, BURR, t. c. **n. spp.**
- Gonolabis* and *Gonolabidæ*, characters, BURR, pp. 293–295, t. c.
- Labia paraguayensis*, Sapucay, CAUDELL, p. 180, J. N. York Ent. Soc. xii ; *L. alluaudi*, *triangulata*, p. 297, *insularis*, p. 298, *forceps*, Madagascar, *paradoxa*, Ecuador, p. 299, BURR, Tr. ent. Soc. London 1904 : **n. spp.**
- Labidura dubroni*, p. 565, *karschi*, pl. xxvi, fig. 1, p. 566, Cameroons, BORG, Arkiv Zool. i, **n. spp.**
- Labidurodes nitidus*, Madagascar, BURR, p. 290, Tr. ent. Soc. London 1904, **n. sp.**
- Neolobophora bicolor*, Ecuador, BORELLI, p. 5, Boll. Mus. Torino xix, No. 475, **n. sp.**
- Odontopsalis* **n. g.** p. 315, *O. harmandi*, p. 316, *lewisi*, p. 317, **n. spp.**, Japan, BURR, Tr. ent. Soc. London 1904.
- Opishocosmia michei*, Abyssinia, p. 307, *erroris*, p. 308, *vicina*, Borneo, *nevilli*, p. 309, *brahma*, p. 310, India, *annandalei*, Malay States, p. 311, *shelfordi*, Sarawak, *temora*, Darjiling, p. 312, BURR, t. c. **n. spp.**
- Platylabia gestroi* ♀, BURR, p. 300, t. c.
- P. camerunensis*, p. 570, pl. xxvi, fig. 4, *bihastata*, fig. 5, p. 571, Cameroons, BORG, Arkiv Zool. i, **n. spp.**
- Pyragra paraguayensis*, Asuncion, BORELLI, p. 1, Boll. Mus. Torino xix, No. 479, **n. sp.**
- Sparatta bongiana*, Cameroons, BORG, pl. xxvi, fig. 3, Arkiv Zool. i ; *S. v. signata*, Mexico, BURR, p. 302, Tr. ent. Soc. London 1904 : **n. spp.**
- Spongiphora assiniensis* ♂, BURR, p. 295, t. c.
- S. gayi*, Abyssinia, id. l. c. ; *S. ochracea*, Cameroons, BORG, p. 569, pl. xxvi, fig. 6, Arkiv Zool. i ; *S. vicina*, Paraguay, BORELLI, p. 6, Boll. Mus. Torino xix, No. 479 : **n. spp.**
- Tomopygia* **n. g.** type *Cylindrogaster abnormis*, p. 287, *T. sinensis* **n. sp.**, Pekin, p. 288, BURR, Tr. ent. Soc. London 1904.

BLATTIDÆ and HEMIMERIDÆ.

[Cf. ADELUNG (11, 12), AGNUS (17), BORG (155), CAUDELL (255), NAVÁS (975), REHN (1128, 1135, 1138), RILEY (1173), REITZENSTEIN (1157), SCUDDER & COCKERELL (1267), SELLARDS (1269, 1270), STERZEL (1345), TEPPER (1370), WASSILIEFF (1488).]

General Catalogue, KIRBY (806A).

Morphology of head of *Blatta*, RILEY (1173).

Salivary glands of *P. orientalis*, LEBEDEFF (866).

Palæozoic *Blattidæ*, see Palæoentomology.

AGNUS states that *Palæoblattina douvillei* is a Trilobite, not a *Blattid*, Naturaliste 1904, p. 80.

Anaplecta platycephala, Queensland, REHN, p. 542, P. U. S. Mus. xxvii, **n. sp.**

Blatta senecta, S. Africa, REHN, p. 554, t. c. **n. sp.**

Blattella germanica injuring books, BRITTON, p. 215, Rep. Connecticut exp. Stat. 1904, pl. iii.

Calolampra pedisequa, Siam, REHN, p. 547, P. U. S. Mus. xxvii, **n. sp.**

Chorisoneura africana, Cameroons, BORG, p. 5, Bih. Svenska Ak. xxviii, Afd. iv, No. 10 ; *C. plocea*, S. Carolina, REHN, p. 164, Ent. News Philad. xv : **n. spp.**

- Deropeltis schweinfurthi* var., ADELUNG, p. 327, Annuaire Mus. St. Petersb. viii.
- D. gabonica*, W. Africa, REHN, p. 556, P. U. S. Mus. xxvii; *D. kachovskii*, p. 319, pl. xx, fig. 6, *pallidipennis*, p. 327, Abyssinia, ADELUNG, t. c.; *D. tullbergi*, Cameroons, BORG, p. 16, pl. ii, fig. 6, Bih. Svenska Ak. xxviii, No. 10: **n. spp.**
- Dipeltis*, a fossil cockroach, SELLARDS, p. 309, Amer. J. Sci. xviii.
- Ectobia perspicillaris* and *livida*, variation and distinctions, ADELUNG, pp. 130-137, Horæ Soc. ent. Ross. xxxvii.
- E. duskei*, S. E. Europe, ADELUNG, p. 127, t. c.; *E. maori*, New Zealand, REHN, p. 541, P. U. S. xxvii: **n. spp.**
- Ellipsidion histrionicum*, Australia, REHN, p. 544, t. c. **n. sp.**
- Epilampra camerunensis*, p. 8, pl. i, fig. 3, *electa*, p. 10, fig. 4, *infinita*, p. 11, fig. 1, *sjostedti*, p. 12, fig. 5, *pallida*, p. 13, fig. 6, *minuta*, p. 14, fig. 2, Cameroons, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10; *E. excelsa*, Himalaya, NAVÁS, p. 131, Bol. Soc. Aragon. iii; *E. trongana*, p. 548, *moloch*, p. 549, Siam, REHN, P. U. S. Mus. xxvii: **n. spp.**
- Eustegasta parva*, Cameroons, BORG, p. 31, Bih. Svenska Ak. Afd. iv, No. 10, **n. sp.**
- Gyna aurivillii*, p. 20, pl. ii, fig. 5, *oblonga*, p. 21, fig. 1, Cameroons, BORG, t. c. **n. spp.**
- Heterogamia gestroyana* var. *n. fulvopicta*, ADELUNG, p. 329, pl. xx, fig. 15, Annuaire Mus. St. Petersb. viii.
- Homœogamia subdiaphana*, New Mexico, SCUDDER, p. 19, pl. v, fig. 3, P. Davenport Ac. ix, **n. sp.**
- Isoniscus n. g.* near *Zetobora*, p. 27, *I. sjostedti* **n. sp.**, Cameroons, p. 28, pl. ii, fig. 3, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10.
- Kakerlac schæfferi*, Texas, REHN, p. 72, Psyche xi, **n. sp.**
- Mallatoblatta brachyptera*, Abyssinia, ADELUNG, p. 303, pl. xx, fig. 13, Annuaire Mus. St. Petersb. viii **n. sp.**
- Opistoplatia plicata*, Himalaya, NAVÁS, p. 130, Bol. Soc. Aragon. iii, **n. sp.**
- Oxyhaloa saussurei*, Cameroons, BORG, p. 29, pl. ii, fig. 2, Bih. Svenska Ak. xxviii, Afd. iv, No. 10; *O. nilotica*, Abyssinia, ADELUNG, p. 334, pl. xx, fig. 9, Annuaire Mus. St. Petersb. viii: **n. spp.**
- Panchlora stolata*, p. 23, pl. i, fig. 7, *camerunensis*, p. 24, Cameroons, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10, **n. spp.**
- Panesthia cetrifera*, Australia, REHN, p. 559, P. U. S. Mus. xxvii, **n. sp.**
- Periplaneta lebedinskii*, Abyssinia, ADELUNG, p. 305, Annuaire Mus. St. Petersb. viii; *P. basedowi*, S. Australia, TEPPER, p. 162, pl. xxxii, Tr. R. Soc. S. Austral. xxviii: **n. spp.**
- Pilema thoracica*, habits, DISTANT, p. 97, Ins. transvaal. i.
- Proscratea bilineata*, Philippines, NAVÁS, p. 135, Bol. Soc. Aragon. iii, **n. sp.**
- Pseudoderopeltis discrepans*, p. 312, pl. xx, fig. 14, *gildessa*, p. 314, fig. 4, *saussurei*, p. 316, fig. 5, Abyssinia, ADELUNG, Annuaire Mus. St. Petersb. viii, **n. spp.**
- Rhcnoda desidiosa*, Siam, REHN, p. 552, P. U. S. Mus. xxvii, **n. spp.**
- Stylopyga flavilatera* var. *n. castanea*, ADELUNG, p. 309, Annuaire Mus. St. Petersb. viii.
- Temnopteryx deropeltiformis* and *Ischnoptera uhleriana*, habits, CAUDELL, p. 78, P. ent. Soc. Washington vi.
- Theganopteryx nitida*, Cameroons, BORG, p. 4, pl. i, fig. 8, Bih. Svenska Ak. xxviii, Afd. iv, No. 10, **n. sp.**
- Thyrsocera tessellata*, Siam, REHN, p. 545, P. U. S. Mus. xxvii, **n. sp.**

MANTIDÆ.

[Cf. CAUDELL (255), CESNOLA (256B), KIRBY (804), NAVÁS (975), REHN (1129, 1136), TEPPER (1370), WERNER (1509), WILLIAMS (1530).]

General Catalogue, KIRBY (806A).

Habits and ootheca of *Gongylus gongyloides*, WILLIAMS, Tr. ent. Soc. London 1904, pp. 125-137.

Acanthops tuberculata ♀, REHN, p. 570, P. U. S. Mus. xxvii.

Carvilia costalis, Abyssinia, KIRBY, p. 85, Ann. Nat. Hist. xiii, n. sp.

Centromantis n. g. for part of *Eremiaphila*, n. spp. named but not described, WERNER, p. 404, Anz. Ak. Wiss. xxvii.

Hapalopeza maculata, Ceylon, KIRBY, p. 84, Ann. Nat. Hist. xiii, n. sp.

Harpagonyx carlottæ, Costa Rica, REHN, p. 568, P. U. S. Mus. xxvii, n. sp.

Heterochæta orientalis, E. Africa, KIRBY, p. 87, Ann. Nat. Hist. xiii, n. sp.

Humbertiella ocularis ♂, KIRBY, p. 82, t. c.

H. ? brunneri, Lombok, KIRBY, p. 83, t. c. n. sp.

Mantis religiosa in N. France, VUILLEMIN, pp. 27-29, Feuille Natural. xxxv; *M. religiosa*, value of dimorphic colour, CESNOLA, Biometrika iii, p. 58.

Oxyopsis n. n. for *Oxyops* SAUSS., CAUDELL, p. 184, J. N. York Ent. Soc. xii.

Paramusonia n. n. for *Musonia* SAUSS. & Z., REHN, p. 567, P. U. S. Mus. xxvii.

Photina gracilipes, Para?, KIRBY, p. 86, Ann. Nat. Hist. xiii, n. sp.

Polyspilota elegans, Himalaya, NAVÁS, p. 132, Bol. Soc. Aragon. iii, n. sp.

Pseudochæta n. g. p. 87, for *P. strachani* n. sp., Lagos, p. 88, KIRBY, Ann. Nat. Hist. xiii.

Pseudomantis pulchellus, S. Australia, TEPPER, p. 163, Tr. R. Soc. S. Austral. xxviii, n. sp.

Pseudomiopteryx infuscata ♀, REHN, p. 566, P. U. S. Mus. xxvii.

Pyrgomantis jonesi, W. Africa, KIRBY, p. 83, Ann. Nat. Hist. xiii, n. sp.

Sphendale robusta, Nepal, KIRBY, p. 86, t. c. n. sp.

Stagmatoptera typhon, Nicaragua, REHN, p. 107, Canad. Ent. xxxvi; *S. insatiabilis*, Costa Rica, REHN, p. 572, P. U. S. Mus. xxvii: n. spp.

Stagmomantis theophila, Costa Rica, REHN, p. 563, t. c. n. sp.

Theopompa westwoodi, W. Africa, KIRBY, p. 81, Ann. Nat. Hist. xiii, n. sp.

Vates townsendi, Mexico, REHN, p. 573, P. U. S. Mus. xxvii, n. sp.

PHASMIDÆ.

[Cf. CAUDELL (251, 255), KIRBY (805), REHN (1130, 1131), SCUDDER & COCKERELL (1267).]

Note on classification, with new subfamilies, KIRBY, pp. 372, etc., Ann. Nat. Hist. xiii.

Remarks on classification of *Phasmidæ*, REHN, p. 107, P. Ac. Philad. xvi.

General Catalogue, KIRBY (806A).

Ovaries, oogenesis, parthenogenesis, *Bacillus rossii*, DAIBER, pp. 177-202, pls. iii, iv, Jena. Zeitschr. xxxix.

Rearing; parthenogenesis, POLAK, p. 148, Ent. Ber. Nederland. i.

Acanthodonia? paradoxa, Santarem, KIRBY, p. 444, Ann. Nat. Hist. xiii, n. sp.

Acanthomina n. g. for *Anophelepis rhipheus* Westw., KIRBY, p. 438, t. c.

- Anchiale nævia*, *stolli* etc., note, REHN, p. 88, P. Ac. Philad. lvi.
Aplopus cytherea ♀, REHN, p. 63, t. c.
A. similis, Swan isld., p. 65, *achalus*, Porto Rico, p. 68, REHN, t. c. n. spp.
Arrhidæus upalamnus, Obi, REHN, p. 85, t. c. n. sp.
Aruanoidea aruana ♂ and varr., REHN, p. 79, t. c.
Bacillus coloradus, pl. i, fig. 4, p. 21, SCUDDER & COCKERELL, P. Davenport Ac. ix.
Bacteria, ferula is type, p. 61, *B. cubensis* ♀, p. 62, REHN, P. Ac. Philad. lvi; *B. tridens* Burm. to *Pseudosermyle*, REHN, p. 51, t. c.
Bactricia ridleyi, Singapore, KIRBY, p. 429, Ann. Nat. Hist. xiii, n. sp.
Bactrododema and *Palophus*, REHN, p. 70, P. Ac. Philad. lvi.
Bacunculus stramineus, New Mexico, SCUDDER, p. 20, pl. i, fig. 1, P. Davenport Ac. ix; *B. dubia*, Paraguay, CAUDELL, p. 186, J. N. York Ent. Soc. xii : n. spp.
Bostra incompta, p. 57, *remiformis*, p. 58, Costa Rica, REHN, P. Ac. Philad. lvi; *B. jaliscensis*, Mexico, REHN, p. 514, t. c. : n. spp.
Calvisia maculicollis Westw. (as *Phasma*) = *atrosignata* Br., REHN, p. 72, t. c.
C. maculata, Penang, KIRBY, p. 435, Ann. Nat. Hist. xiii, n. sp.
Carausius braccatus, Siam, p. 42, *mammatus*, p. 44, *obiensis*, p. 46, Obi, REHN, P. Ac. Philad. lvi, n. spp.
Ceraticus n. g. *Chitumnina*, *C. laticeps* n. sp., Paraguay, CAUDELL, p. 188, J. N. York Ent. Soc. xii.
Ceroys bigibbus, Nicaragua, REHN, p. 48, P. Ac. Philad. lvi, n. sp.
Datames equalis, Obi, REHN, p. 89, t. c. n. sp.
Eubulides spuria, Australia, KIRBY, p. 441, Ann. Nat. Hist. xiii, n. sp.
Eurycantha willeyi = (*horrida* Sharp nec Boisd.) New Britain, *portentosa*, Rossel isld., p. 442, *sifa*, Thursday isld., p. 443, KIRBY, t. c. n. spp.
Eurycnema magnifica, New Guinea, p. 439, *viridissima*, N. Australia, p. 440, KIRBY, t. c. n. spp.
Haaniella n. n. for *Heteropteryx*, Haan nec Gray, KIRBY, p. 444, t. c.
Haplopus evadne, characters, cuts, CAUDELL, p. 950, P. U. S. Mus. xxvii.
Heliastus sumichrasti var. n. *rosea*, CAUDELL, p. 951, t. c.
Heteronemia ignava, Costa Rica, REHN, p. 54, P. Ac. Philad. lvi, n. sp.
Ignacia n. g. for *Pseudophasma* Bol. nec Kirb., REHN, p. 95, t. c.; *I. appendiculata*, Nauta, KIRBY, p. 446, Ann. Nat. Hist. xiii, n. sp.
Lonchodes Gray = (*Dixippus* Stål), KIRBY, p. 373, Ann. Nat. Hist. xiii.
L. ? viridis, Tonkin, KIRBY, p. 373, t. c. n. sp.
Macella caulodes, Siam, REHN, p. 80, P. Ac. Philad. lvi, n. sp.
Marmessoidea phluctainoides referred to *Arrhidæus*, KIRBY, p. 438, Ann. Nat. Hist. xiii.
M. phluctainoides, Japan, REHN, p. 73, P. Ac. Philad. lvi, n. sp.
Myronides ashmeadi, Siam, REHN, p. 38, t. c. n. sp.
Necrosia, *N. roscipennis* to be type, KIRBY, p. 436, Ann. Nat. Hist. xiii, *N. tonkinensis*, Tonkin, id. p. 437, t. c. n. sp.
Neohirasea n. g. for *L'urapachymorpha japonica*, REHN, p. 84, P. Ac. Philad. lvi.
Oncotophasma n. g. for part of *Bostra*, REHN, p. 59, t. c.
Oreophates n. g. near *Heteronemia* for *Bacteria peruana* Sauss., REHN, p. 56, t. c.
Orxines, xiphis Westw. is type, REHN, p. 71, t. c.
Oxyartes lamellatus, Tonkin, KIRBY, p. 374, Ann. Nat. Hist. xiii, n. sp.
Olcypoides iridescens, Trinidad, KIRBY, p. 445, t. c. n. sp.
Orthonecrosia n. n. for *Necrosia* Brunn., with *O. pulcherrima*, Borneo, p. 436, *ruficeps*, Solomon islds., p. 437, n. spp., KIRBY, t. c.
Paraleptynia n. g. near *Baculum*, *P. fosteri* n. sp., Paraguay, CAUDELL, p. 187, J. N. York Ent. Soc. xii.
Phænopharos n. g. for *Lopaphus struthioncus* Westw., KIRBY, p. 433, Ann. Nat. Hist. xiii.

- Phasma*, type is *P. empusa*, KIRBY, p. 439, t. c.
Phraortes mikado, Japan, REHN, p. 40, P. Ac. Philad. lvi, n. sp.
Phyllium scythe and *pulchrifolium*, variation and distinction, REHN, p. 106, t. c.
Planudes crenulipes, Costa Rica, REHN, t. c. n. sp.
Promachus? *letus*, p. 375, *bicolor*, p. 376, Tonkin, KIRBY, Ann. Nat. Hist. xiii, n. spp.
Pseudophasma phæton, p. 95, *cryptochlore*, p. 98, Costa Rica, REHN, P. Ac. Philad. lvi; *P. inca*, Peru, p. 447, *cambridgei*, p. 448, Santarem, KIRBY, Ann. Nat. Hist. xiii : n. spp.
Sermyle physconia, Costa Rica, REHN, p. 51, P. Ac. Philad. lvi, n. sp.
Sipyloidea pæcilopectera, Obi, REHN, p. 77, t. c. n. sp.
Sosibia peninsularis, Penang, KIRBY, p. 434, Ann. Nat. Hist. xiii, n. sp.
Stalonychodes n. g. (*Lonchodes* pars), p. 372, *S. gracillimus* n. sp., Tonkin, p. 373, KIRBY, t. c.
Stratocles multilineatus, p. 91, *costaricensis*, p. 93, Costa Rica, REHN, P. Ac. Philad. lvi, n. spp.
Tersomia n. g. *Bacteriinae*, p. 431, for *T. brasiliensis* n. sp., Iguarassu, p. 432, KIRBY, Ann. Nat. Hist. xiii.
Xerosoma glyptomerion, Costa Rica, REHN, p. 101, P. Ac. Philad. lvi, n. sp.

GRYLLIDÆ.

- [Cf. BRUNER (195), REHN (1131), SCUDDER & COCKERELL (1267), VOSS (1461), WALKER (1465).]
 Phagocytic organs in *Gryllidæ*, DAWYDOFF (356).
 Spermatogenesis, peculiar, *Gryllus*, VOINOV (1460).
Ectatoderus borealis, New Mexico, pl. iv, fig. 4, p. 58, SCUDDER, P. Davenport Ac. ix, n. sp.
Myrmecophila acervorum ♂, CSIKI, pp. 85, 88, Allatt. Kozl. Magyar. Tars. iii; *M. acervorum*, *ochracea*, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.
Nemobius fasciatus var. n. *abortivus*, CAUDELL, p. 248, Canad. Ent. xxxvi.
N. griseus, p. 182, *angusticollis*, p. 186, Ontario, WALKER, Canad. Ent. xxxvi; *N. brevicaudus*, Colorado, BRUNER, p. 57, Bull. Exp. Stat. Colorado 94 : n. spp.
Oecanthus niveus, natural history, HOUGHTON, pp. 57-61, Ent. News Philad. xv.
Paranemobius schauinslandi, pl. xxxii, figg. 1-4, p. 567, ALFKEN, Zool. Jahrb. Syst. xix.
Thamnoscirtus cæruleus, Mexico, REHN, p. 548, P. Ac. Philad. lvi, n. sp.

LOCUSTIDÆ or TETTIGONIIDÆ.

- [Cf. COCKERELL (290), GILLETTE (605), HANCOCK (655), HUTTON (729), KRAUSZE (843, 844), NAVÁS (975), REHN (1131, 1132, 1139), SCUDDER & COCKERELL (1267), TEPPER (1370), WALKER (1466).]
Locustidæ, notes on some Australian, including *Acridopeza reticulata*, FROGGATT, pp. 733-737, plate, Agric. Gaz. N. S. W. xv.
 Annotated list of *Locustidæ* of Ontario, characters, song, etc., WALKER, Canad. Ent. xxxvi, pp. 325 etc.
 Phagocytic structures, *Cleandrus*, DAWYDOFF (357).
Anabrus simplex, habits, GILLETTE, pp. 321-324, pl. xix, Ent. News Philad. xv.

- Arethaca carita*, New Mexico, pl. iv, fig. 5, p. 52, SCUDDER, P. Davenport Ac. ix, n. sp.
- Camptonotus carolinensis*, leaf-rolling habits, CAUDELL, pp. 46-49, P. ent. Soc. Washington vi.
- Capnobotes*, table of species, *C. occidentalis*, habits, and var. n. *viridis*, COCKERELL, pp. 179-181, Entomologist 1904.
- Conocephalus ultimus*, Tonkin, KRAUSZE, p. 213, *Ins. Börse* 1904, n. sp.
- Ceuthophilus aridus*, Colorado, BRUNER, p. 57, Bull. Exp. Stat. Colorado 94 ; *C. virgatipes*, Georgia, REHN & HEBARD, p. 798, P. Ac. Philad. 1904 ; *C. politus*, pl. iv, fig. 3, p. 56, *ater*, p. 57, New Mexico, SCUDDER, P. Davenport Ac. ix ; *C. macropus*, Mexico, REHN, p. 545, P. Ac. Philad. lvi : n. spp.
- Cyphoderris monstrosa*, characters, natural history, var. n. *piperi*, CAUDELL, pp. 47-53, J. N. York Ent. Soc. xii.
- c// *Dichopetala brevicauda*, New Mexico, pl. iv, fig. 1, p. 51, SCUDDER, P. Davenport Ac. ix, n. sp.
- Drymadusa arizonensis*, Arizona, REHN, p. 573, P. Ac. Philad. lvi, n. sp.
- Ephippiger vitium*, habits, XAMBEU, p. 124, Ann. Soc. Linn. Lyon l.
- E. pantingana*, Spain, NAVÁS, p. 191, Bol. Soc. Aragon. iii, n. sp.
- Eremopedes popeana*, New Mexico, pl. iv, fig. 2, p. 54, SCUDDER, P. Davenport Ac. ix, n. sp.
- Gammaroparnops crassicuris*, ALFKEN, pl. xxxii, figg. 5-9, Zool. Jahrb. Syst. xix.
- Gryllacris scripta*, Philippines, NAVÁS, p. 138, Bol. Soc. Aragon. iii ; *G. atrofrons*, S. Australia, TEPPER, p. 167, Tr. R. Soc. S. Austral. xxviii : n. spp.
- Gymnoplectron stephensiensis*, ALFKEN, pl. xxxii, fig. 10, p. 588, Zool. Jahrb. Syst. xix.
- Hexacentrus stali*, Tonkin, KRAUSZE, p. 213, *Ins. Börse* 1904, n. sp.
- Holochlora stali*, Tonkin, KRAUSZE, p. 29, t. c. n. sp.
- Orchelimum minor*, habits, DAVIS, p. 132, Canad. Ent. xxxvi ; *O. glaberrimum*, habits, HANCOCK, Psyche xi, pp. 69-71, pl. v.
- Phrixocnemis inhabilis*, St. Louis, REHN, p. 282, Ent. News Philad. xv, n. sp.
- Plagiosira albofasciata*, New Mexico, pl. iii, fig. 2, p. 55, SCUDDER & COCKERELL, P. Davenport Ac. ix, n. sp.
- Platyleis roeseli* var. *diluta*, ADELUNG, p. xxxv, Annuaire Mus. St. Petersb. viii.
- Pleiopectron serratum*, Chatham islands, HUTTON, p. 154, Tr. N. Zealand Inst. xxxvi, n. sp.
- Pristoceuthophilus marmoratus*, California, REHN, p. 280, Ent. News Philad. xv, n. sp.
- Pycnogaster brevipes* ♀, NAVÁS, pl. iv, Bol. Soc. Aragon. iii.
- Pyrrhizia brunneri*, Tonkin, KRAUSZE, p. 29, *Ins. Börse* 1904, n. sp.
- Saga*, species of Asia Minor and Syria, synonymy, WERNER, pp. 81, 82, Zool. Anz. xxviii.
- Stipator grandis*, Mexico, REHN, p. 544, P. Ac. Philad. lvi, n. sp.

ACRIDIIDÆ.

[Cf. BOLÍVAR (144-147), BRUNER (195, 614), EWING (472), FROGGATT (558), HANCOCK (655), LYNCH ARRIBALZAGA (897), MORSE (961, 962), NAVÁS (975), REHN (1131-1133, 1137), REHN & HEBARD (1134), RÖHLER (1185), TEPPER (1370).]

Revision of *Pyrgomorphidæ*, pts. I-VII, BOLÍVAR, Boll. Soc. espan. iv.
 Monograph of Ceylon *Tettigidæ*, HANCOCK, Spolia Zeylan. ii, pp. 97-157,
 3 pls. and map.

- Notes on N. American *Acridiidae*, systematic, biological, distributional, MORSE, Publ. Carnegie Inst. No. 18.
- Antennal sense-organs, *Tryxalis*, RÖHLER, Zool. Anz. xxviii, pp. 188-192, cut.
- Notes and figures of a few species of Australian *Acridiidae*, FROGGATT, Agric. Gaz. N. S. W. xv, pp. 240-244, 1 pl.
- Experiments as to functions of nervous system and respiration, EWING, Kansas Univ. Sci. Bull. ii, No. 11.
- Acantherus* n. g. *Tryxalinae*, p. 22, *piperatus* n. sp., New Mexico, pl. iii, fig. 3, p. 23, SCUDDER, P. Davenport Ac. ix.
- Acantholobus* n. g. p. 131, for part of *Criotettix* Bol., *A. miliarius cuneatus* var. n., p. 133, HANCOCK, Spolia Zeylan. ii.
- Achurum sumichrasti*, pl. i, fig. 6, p. 34, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Acolophus minor*, Colorado, BRUNER, p. 60, Bull. Exp. Stat. Colorado 94, n. sp.
- Acrida turrita*, distribution, SHUGUROV [in Russian], p. 109, Rev. Russe Ent. iv.
- Acridium peregrinum*, migratory swarm, MORSE, p. 528, J. Bombay Soc. xv.
- Acrocara maculipennis*, pl. i, fig. 1, p. 49, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Acrolophitus variegatus*, Texas, BRUNER, p. 48, t. c. n. sp.
- Æolophilus crassus*, New Mexico and Mexico, SCUDDER, p. 42, P. Davenport Ac. ix, n. sp.
- Ageneotettix occidentalis*, Colorado, BRUNER, p. 58, Bull. Exp. Stat. Colorado 94, n. sp.
- Amblytropidia mysteca*, pl. i, fig. 14, p. 66, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- A. magna*, Mexico, p. 63, *trinitatis*, S. America, p. 65, *costaricensis*, Nicaragua, p. 66, *inegnita*, p. 67, *elongata*, p. 68, Mexico, BRUNER, t. c. n. spp.
- Amphitornus ornatus*, pl. i, fig. 13, p. 58, BRUNER, t. c.
- Anarchita* n. g. for *Pyrgomorpha aptera* Bol., BOLÍVAR, p. 459, Bol. Soc. espan. iv.
- Apterotettix* n. g. *A. obtusus* n. sp., Ceylon, HANCOCK, p. 140, Spolia Zeylan. ii.
- Arphia canora*, New Mexico, REHN, p. 564, P. Ac. Philad. lvi; *A. truculenta*, Mexico, REHN, p. 522, t. c. : n. spp.
- Boopedon hoagi*, p. 519, *gracile*, p. 520, Mexico, REHN, t. c.; *B. fuscum*, Arizona, p. 96, *savannarum*, Nebraska, p. 97, *diabolicum*, pl. i, fig. 1, *flaviventris*, Mexico, p. 98, BRUNER, Biol. Centr.-Amer. Orthopt. ii : n. spp.
- Boëtettix argentatus*, pl. i, fig. 24, p. 52, BRUNER, t. c.
- Caconda plicatula*, Angola, BOLÍVAR, p. 110, Bol. Soc. espan. iv, n. sp.
- Calamacris* n. g. near *Orthacris*, *C. clendoni* n. sp., Mexico, REHN, p. 529, P. Ac. Philad. lvi.
- Caloptenus italicus* in France in 1901, CREUSOT, pp. 28-30, Bull. Soc. Autun xv.
- Campylocantha vegana*, New Mexico, SCUDDER & COCKERELL, p. 40, P. Davenport Ac. ix, n. sp.
- Cephalocoema chapadensis*, Brazil, REHN, p. 681, P. Ac. Philad. 1904, n. sp.
- Chrotogonus*, revision, BOLÍVAR, pp. 91-110, Bol. Soc. espan. iv.
- C. abyssinicus*, p. 97, Africa, *brevis*, Kurrachee, p. 99, *lameerei*, p. 100, *occidentalis*, p. 104, *gabonicus*, p. 105, W. Africa, *rollini*, Boma Sundi, *bloyeti*, Kondoia, p. 106, *varelai*, E. Africa, *marshalli*, Salisbury, p. 107, BOLÍVAR, t. c. n. spp.
- Cladonotus latiramus*, Ceylon, HANCOCK, p. 114, pl. i, fig. 1, Spolia Zeylan. ii, n. sp.

- Conozoa acuminata*, p. 32, pl. ii, fig. 4, *corrugata*, p. 33, *melleola*, fig. 2, *picturata*, p. 34, New Mexico, SCUDDER, P. Davenport Ac. ix, n. spp.
- Coryphistes cyanopteroides*, p. 164, *serratus*, p. 165, *nigroconspersus*, p. 166, S. Australia, TEPPER, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Criotettix spinilobus*, Ceylon, HANCOCK, p. 129, *Spolia Zeylan.* ii, n. sp.
- Cuculligera flexuosa* var. n. *azurea*, NAVÁS, p. 195, Bol. Soc. Aragon. iii.
- C. capucina*, Spain, NAVÁS, p. 193, t. c. n. sp.
- Dactylotum histicum*, Mexico, REHN, p. 539, P. Ac. Philad. lvi, n. sp.
- Dasyleurotettix* n. g. near *Diotarus*, *D. curriei* n. sp., Liberia, REHN, p. 658, t. c.
- Deltonotus* n. g. *Cladonotinae*, *D. tectiformis* n. sp., Ceylon, HANCOCK, p. 111, pl. i, fig. 2, *Spolia Zeylan.* ii.
- Dichromorpha mexicana*, pl. i, fig. 18, *longipennis*, Mexico, p. 87, BRUNER, Biol. Centr.-Amer. Orthopt. ii, n. spp.
- Encoptolophus coloradensis*, Fort Collins, BRUNER, p. 58, Bull. Exp. Stat. Colorado 94, n. sp.
- Eotettix pusillus*, *palustris*, N. America, MORSE, p. 7, Psyche xi, n. spp.
- Erianthus nipponensis*, Japan, REHN, p. 672, P. Ac. Philad. 1904, n. sp.
- Eritettix brachypterus*, Mexico, BRUNER, p. 53, Biol. Centr.-Amer. Orthopt. ii, n. sp.
- Erucius magnificus* (= *vitreus* Brunn.), Labuan, REHN, p. 674, P. Ac. Philad. 1904, n. sp.
- Euparatettix* n. g. *E. parvus* n. sp., Ceylon, HANCOCK, p. 145, *Spolia Zeylan.* ii.
- Eupedetes* n. g. near *Eritettix*, p. 24, *carinatus* n. sp., New Mexico, pl. i, fig. 2, p. 25, SCUDDER, P. Davenport Ac. ix; *E.*, descr. reproduced, Biol. Centr.-Amer. Orthopt. ii, p. 54.
- Gesonia zonocera*, Philippines, NAVÁS, p. 136, Bol. Soc. Aragon. iii, n. sp.
- Gomphocerus meridionalis*, Mexico, BRUNER, p. 93, Biol. Centr.-Amer. Orthopt. ii, n. sp.
- Hedotettix gracilis abortus* var. n., HANCOCK, p. 151, *Spolia Zeylan.* ii.
- H. attenuatus*, Ceylon, id. l. c. n. sp.
- Hesperotettix gillettei*, *coloradensis*, Colorado, BRUNER, p. 61, Bull. Exp. Stat. Colorado 94, n. spp.
- Humpatella severini*, Congo, BOLÍVAR, p. 438, Bol. Soc. espan. iv, n. sp.
- Hybusa reedi*, Chile, REHN, p. 679, P. Ac. Philad. 1904, n. sp.
- Lamellitettix* n. g. near *Mazarredia*, p. 125, *L. acutus* n. sp., Ceylon, p. 126, pl. ii, fig. 6, HANCOCK, *Spolia Zeylan.* ii.
- Lauferia* n. g. for *Ochrophlebia chloronota*, BOLÍVAR, p. 445, Bol. Soc. espan. iv.
- Leptea* subg. n. of *Pyrgomorphella* for *P. debilis* Finot, BOLÍVAR, p. 457, t. c.
- Leuconotus* n. g. *L. biolleyi* n. sp., Costa Rica, BRUNER, p. 57, Biol. Centr.-Amer. Orthopt. ii.
- Linoceratium* n. g. near *Orphulella*, *L. boucardi* n. sp., Central America & Colombia, BRUNER, p. 84, t. c.
- Loxilobus* n. g. near *Criotettix*, *L. acutus*, pl. i, fig. 3, p. 134, *rugosus*, p. 135, n. spp., Ceylon, HANCOCK, *Spolia Zeylan.* ii.
- Machærocera obscura*, p. 50, *magna*, *pacifica*, p. 51, Mexico, BRUNER, Biol. Centr.-Amer. Orthopt. ii, n. spp.
- Maura venusta*, p. 320, *modesta*, p. 322, *marshalli*, p. 323, *selysi*, p. 325, Africa, BOLÍVAR, Bol. Soc. espan. iv, n. spp.
- Mazarredia aptera*, Labuan, REHN, p. 663, P. Ac. Philad. 1904, n. sp.
- Melanoplus flabellifer*, *brevipennis* var. n., BRUNER, p. 65, Bull. Exp. Stat. Colorado 94.
- M. symmetricus*, *divergens*, p. 8, *deceptus*, *similis*, p. 9, *celatus*, *sylvestris*,

Leuconotus n. sp. See P. 356.

- carnegiei*, p. 10, *strumosus*, *tribulus*, p. 11, *devius*, *decoratus*, p. 12, *australis*, p. 13, N. America, MORSE, Psyche xi; *M. stonei*, New Jersey, REHN, p. 85, Ent. News Philad. xv; *M. sanguineus*, p. 63, *tristis*, p. 64, *dimidiipennis*, p. 66, Colorado, BRUNER, Bull. Exp. Stat. Colorado 94; *M. scitus*, p. 44, *neomexicanus*, p. 46, *bicoloratus*, p. 48, *quadratus*, p. 49, New Mexico, SCUDDER, P. Davenport Ac. ix : n. spp.
- Melanotettix* n. g. near *Stenobothrus*, p. 80, *M. dibelonus*, pl. i, fig. 16, n. sp., Mexico, p. 91, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Mermiria texana*, pl. i, fig. 19, *maculipennis*, fig. 9, BRUNER, p. 38, t. c.
- Mestobregma thomasi* n. n. for *cinctum* Br. nec Thomas, CAUDELL, p. 125, P. ent. Soc. Washington vi.
- Mitraria pontificalis* Liberia, REHN, p. 664, P. Ac. Philad. 1904, n. sp.
- Monistria ligota*, Sydney, BOLÍVAR, p. 436, Bol. Soc. espan. iv, n. sp.
- Napaia gracilis*, pl. i, fig. 2, p. 90, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Ochrophlebia proxima*, S. Africa, BOLÍVAR, p. 444, Bol. Soc. espan. iv, n. sp.
- Ochrophlegma* subg. n. of *Ochrophlebia*, BOLÍVAR, p. 443, t. c.
- Ochrotettix* n. g. *O. salinus* n. sp., Mexico, pl. i, figg. 4, 5, BRUNER, p. 56, Biol. Centr.-Amer. Orthopt. ii.
- Opeia imperfecta*, Texas and Mexico, p. 59, *pallida*, *mexicana*, pl. i, fig. 15, p. 60, *palmeri*, *lineata*, p. 61, Mexico, BRUNER, t. c. n. spp.
- Orchetypus ocreatus*, Congo, REHN, p. 670, P. Ac. Philad. 1904, n. sp.
- Orphula azteca*, pl. i, fig. 3, pp. 73, 74, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- O. meridionalis*, Costa Rica, id. p. 73, t. c. n. sp.
- Orphulella graminea*, Arizona, p. 78, *meridionalis*, p. 81, *costaricensis*, Costa Rica, *prominula* p. 82, *robusta*, p. 83, Mexico, BRUNER, t. c. n. spp.
- Papagoa* n. g. *Tryxalina*, *P. arizonensis* n. sp., Arizona, BRUNER, p. 42, t. c.
- Parachlæbata* n. g. near *Orphulella*, p. 83, *P. pratensis* n. sp., Cuba, p. 84, pl. i, fig. 10, BRUNER, t. c.
- Parasphena dubia*, p. 440, *picticeps*, p. 441, Africa, BOLÍVAR, Bol. Soc. espan. iv, n. spp.
- Paropomala pallida* p. 40, *dissimilis*, p. 41, North America, BRUNER, Biol. Centr.-Amer. Orthopt. ii, n. spp.
- Perixerus variabilis*, Mexico, REHN, p. 541, P. Ac. Philad. lvi, n. sp.
- Phaneroturis* n. g. *P. cupido*, pl. i, fig. 17, n. sp., Guatemala, p. 88, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Phymateus*, tabulation of species, with varr. n., BOLÍVAR, pp. 403-418, Bol. Soc. espan. iv.
- P. pulcherrimus*, Abyssinia, p. 408, *coralliferus*, Transvaal, p. 410, *puniceus*, p. 415, *cardinalis*, p. 416, Madagascar, BOLÍVAR, t. c. n. spp.
- Phyteumas* n. g. for *Phymateus olivaceus* Karsch, BOLÍVAR, p. 402, t. c.
- Platephippius* subg. n. of *Platystolus*, for *ustulatus* Ramb., NAVÁS, p. 197, Bol. Soc. Aragon. iii.
- Platystolus*, cf. *Platephippius*.
- P. obivus*, Spain, NAVÁS, p. 196, Bol. Soc. Aragon. iii, n. sp.
- Plectrotettix calidus*, p. 101, *excelsus*, *macneilli*, pl. i, fig. 12, p. 102, Mexico, BRUNER, Biol. Centr.-Amer. Orthopt. ii, n. spp.
- Plerisca* n. g. *Pyrgomorphina*, *peringueyi* n. sp., Cape Good Hope, p. 442, BOLÍVAR, Bol. Soc. espan. iv.
- Pacilocerus tessellatus*, India, BOLÍVAR, p. 433, t. c. n. sp.
- Psolocessa buddiana*, pl. i, fig. 8, p. 104, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Pyrgomorphia inaequalipennis*, hab. ?, *cylindrica*, Angola, p. 453, *capensis*, S. Africa, p. 455, BOLÍVAR, t. c. n. spp.
- Pyrgomorphella sphenarioides*, Abyssinia, *madecassa*, Madagascar, BOLÍVAR, p. 458, Bol. Soc. espan. ii, n. spp.
- Rubellia brancsiki*, Madagascar, BOLÍVAR, p. 437, t. c. n. sp.

- Scelimena logani*, Ceylon, aquatic, HANCOCK, p. 120, pl. i, fig. 5, Spolia Zeylan. ii; *S. abbotti*, Siam, REHN, p. 660, P. Ac. Philad. 1904 : n. spp.
- Schistocerca philippina*, Mindanao, NAVÁS, p. 137, Bol. Soc. Aragon. iii; *S. peruviana*, Peru, LYNCH ARRIBÁLZAGA, p. 2, An. Mus. Buenos Aires (3) ii : n. spp.
- Scyllina physopoda*, Himalaya, NAVÁS, p. 133, Bol. Soc. Aragon. Ci. nat. iii, n. sp.
- Silvitettix* n. g. p. 55, *S. communis* n. sp., Costa Rica, p. 56, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Sinaloa brevispinis*, Mexico, REHN, p. 534, P. Ac. Philad. lvi, n. sp.
- Sisantum* n. g. near *Orphulella*, *S. notochloris* n. sp., pl. i, fig. 11, p. 69, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Spharagemon saxatile* var. n. *planum*, MORSE, p. 13, Psyche xi.
- Sphenariinae*, revision, BOLÍVAR, pp. 306-328, Bol. Soc. espan. iv.
- Stenacris* Walk. = (*Arnilia* Stål), REHN & HEBARD, p. 787, P. Ac. Philad. 1904.
- Syrbula pacifica*, p. 44, *robusta*, Mexico, *modesta*, Arizona, p. 46, BRUNER, Biol. Centr.-Amer. Orthopt. ii, n. spp.
- Tæniopoda tamaulipensis*, Mexico, REHN, p. 531, P. Ac. Philad. lvi, n. sp.
- Tanita* n. g. p. 446, for *Purgomorpha* part, with *T. longiceps*, p. 447, *loosi*, p. 449, *ferrierei*, *purpurea*, p. 450, n. spp., Africa, BOLÍVAR, Bol. Soc. espan. iv.
- Tapesia* n. n. for *Petasia*, p. 311, *T. producta*, p. 383, *karschi*, p. 315, Africa, n. spp., *T. spumans* varr. n. pp. 316-318, BOLÍVAR, t. c.
- Taphronota calliparea* var. n. *poultoni*, p. 397, BOLÍVAR, t. c.
- T. dimidiata*, Abyssinia, p. 397, *merceti*, p. 398, *amaranthina*, p. 400, W. Africa, BOLÍVAR, t. c. n. spp.
- Tenuitarsus* n. g. *Chrotogoninae*, *revoili* n. sp., Somali land, BOLÍVAR, p. 90, t. c.
- Tetanorhynchus biastatus*, p. 677, *smithi*, p. 678, Brazil, REHN, P. Ac. Philad. 1904, n. spp.
- Tettigidia pulchella*, British Guiana, REHN, p. 669, t. c. n. sp.
- Tettix atypicalis*, p. 142, with var. *ceylonus*, p. 143, Ceylon, HANCOCK, Spolia Zeylan. ii, n. sp.
- Thyriptilon* n. g. p. 68, *T. vitripenne* n. sp., Mexico, p. 69, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Trimerotropis inconspicua*, Colorado, BRUNER, p. 59, Bull. Exp. Stat. Colorado 94; *T. rubripes*, New Mexico, REHN, p. 568, P. Ac. Philad. lvi; *T. cyanea*, pl. ii, fig. 3, p. 36, *alliciens*, fig. 1, p. 37, New Mexico, SCUDDER, P. Davenport Ac. ix : n. spp.
- Zapata* n. g. near *Aulocara*, *Z. brevipennis*, pl. i, fig. 22, n. sp., Mexico, BRUNER, p. 103, Biol. Centr.-Amer. Orthopt. ii.

XIV. ECHINODERMA.

BY

F. A. BATHER.

CONTENTS.

	Page
Introduction	3
Corrigenda in Previous Records	6
I.—TITLES	7
II.—BIOLOGY.	
A. Evolution.	
i General Principles	31
ii Relations of Echinoderma	31
iii Phylogenies of smaller groups	31
B. Morphology.	
i Anatomy	32
(This is divided into Classes a—h, as under IV, and each Class is subdivided as follows):—	
1. General Accounts.	
2. Symmetries.	
3. Homologies of Classes.	
4. Skeletal tissue or Stereom.	
5. Skeletal anatomy.	
6. Hydrocoel and associated cavities, Respiratory organs.	
7. Coelom and other Body-cavities and their Contents.	
8. Digestive system. Cuvierian organs.	
9. Nervous systems and sense-organs.	
10. Mesodermal tissues (exc. skeletal).	
11. Axial organ or Ovoid gland.	
12. Generative organs and gonads.	
ii Variation:—	
a. In form	34
b. In form and surface-characters	34
c. In colour	34
d. Meristic (1 & 2)	34
e. Abnormalities	34

	Page
iii Secondary Sexual Characters :—	
a. Differences of Form or Structure	34
b. Differences of colour	34
c. Protection of young	34
c. Physiology :—	
i General	34
ii Circulation	35
iii Respiration	35
iv Alimentation and Digestion	35
v Excretion and its Products	35
vi Sensation	35
vii Miscellanea and Experimental	35
d. Bionomics :—	
i General Accounts	(Vacant)
ii Special habits	35
iii Habitat (in Classes a—h, as under IV)	35
iv Feeding (ditto) (ditto)	35
v Defence and Protection	(Vacant)
vi Locomotion	35
vii Autotomy and Regeneration (in Classes a—h)	36
viii Parasites and Commensals (ditto)	36
ix Echinoderms as Food	36
x Echinoderms in Geological Aspect	36
e. Miscellaneous :—	
i Research and Instruction (a. Preservation. b. Methods of research. c. Museum exhibits and Collections. d. Instruction)	37
ii Economics	37
iii Bibliography	37
iv Historical, Popular notions, &c.	37
f. Auxology :—	
i General principles	(Vacant)
ii General accounts	37
iii Formation of Gonads	37
iv Oviposition, Fertilisation, Segmentation	37
v Larval stages	38
vi Organogeny, 1-12, as under II, B, i	38
vii Post-larval growth-stages	38
viii Developmental mechanics and Experimental Embryology	38
(Under each of the above a—h indicate Classes as under IV.)	
III.—DISTRIBUTION.	
a. Geographical :—	
i General	39
ii Atlantic Ocean and adjacent Seas	40
iii Indian Ocean and adjacent Seas	40
iv Pacific Ocean and adjacent Seas	41
v Arctic Ocean and adjacent Seas	41
vi Antarctic Ocean and adjacent Seas	42

	Page
B. Geological :—	
i General	42
ii Cainozoic :—	
a. General	42
b. Pleistocene	42
c. Pleiocene	42
d. Meiocene	42
e. Oligocene	(Vacant)
f. Eocene	43
iii Mesozoic :—	
a. General	(Vacant)
b. Cretaceous (1. Upper. 2. Lower)	43
c. Jurassic (1. Upper. 2. Middle. 3. Lower)	45
d. Lias (including Rhaetic)	45
e. Trias	46
iv Palæozoic :—	
a. General	46
b. Permian	46
c. Permo-Carboniferous	46
d. Upper Carboniferous	46
e. Lower Carboniferous	46
f. Devonian	46
g. Silurian	46
h. Ordovician	47
k. Cambrian	(Vacant)
l. Pre-Cambrian	(Vacant)

IV.—SYSTEMATIC.

A. Echinoderma, general	47
B. Holothurioidea	47
C. Echinoidea	50
D. Asteroidea	74
E. Ophiuroidea	80
F. Crinoidea	87
G. Cystidea and Edrioasteroidea	93
H. Blastoidea	95
K. Incertæ Sedis	96

INTRODUCTION.

I. TITLES. The total 303 is thus made up: 1891, 1; 1892, 3; 1896, 2; 1898, 2; 1899, 2; 1900, 3; 1901, 10; 1902, 12; 1903, 27; 1904, 239; 1905, 2. The sudden decline in both the total and the number for the year is partly due to a change in the method of obtaining the titles, partly to the fact that longer working hours at the British Museum (Nat. Hist.) render it more difficult for members of the staff to utilize the library of that establishment. In these circumstances the task of copying titles, indexing names, and sorting slips has been mainly performed by Miss Grant, to whose intelligent care I am deeply indebted. Making further allowance for the usual deficiency, the following numbers of writings dealing with Echinoderms in the years 1891–1904 inclusive, prove a genuine increase in the annual output: 189, 171, 166, 155, 172, 219, 198, 230, 264, 318, 314, 289, 317, 240. That this has *not* been accompanied by increase in the length of the Record is clear from comparison of my predecessor's

1891 Record (devoting 91 pages to 186 papers and a few abstracts) with the 1902 Record (where 307 papers with many notes and abstracts are indexed in 88 pages). The length of a Record for a given year depends less on the number of titles than on the proportion of large monographs, and in such works 1904 was peculiarly rich.

II. BIOLOGY. The Echinoderm volume of DELAGE & HÉROUARD's 'Traité de Zoologie concrète' (54) gives an admirable summary of the morphology, especially of living forms, the Phylum as a whole and each Class being described in terms of an ideal type. This method, though LAMBERT's criticism of it is most just, forms a valuable complement to the evolutionary method adopted in the corresponding volume of Lankester's 'Treatise' (Zool. Rec. 1900, No. 19). There is, however, a chapter on phylogeny, in which the authors adopt as at least *ben trovato* the Pelmatozoic theory elaborated in that treatise. They add full accounts of the Physiology and Embryology of each extant Class. In a separate paper (121) HÉROUARD puts forth his own hypothesis of the origin of Echinoderms from a metamerically segmented Dipleuraea. A more elaborate speculation is started by E. MEYER (190): a typically segmented Annelid, taking to a half-sedentary, partly tubicolous life gives rise to the three groups of Prosopygia—Sipunculoidea, Phoronoidea, and Bryozoa; at an early stage in this history branched off the hypothetical *Astelminthes*, of which the Dipleurula is the ontogenetic equivalent; these possessed a terminal anus, an anterior pair of nephridia with internal openings near the diaphragm, a crown of tentacles with ciliated grooves round the terminal mouth, and a pair of symmetric diaphragm-sacks as precursors of the ambulacral system. SIMROTH (256) dismissing all other theories as fantastic, and brushing aside palaeontology, considers that the Echinoderms are derived from their own parasites, the Myzostomes, in this way "dass je ein Darmblindsack in eine Sinnesknospe hineinwucherte und sich mit dieser verband. Das dürfte das ganze Geheimnis sein."

Anatomy.—A large number of important details, beautifully illustrated, are contributed by AGASSIZ (3) to our knowledge of the Echinoid test, principally in abyssal Spatangoids. Since this memoir suffers from the absence of an index, a list of the genera dealt with is given under III, A, iv. A similar assemblage is handled by DE MEJERE (57), but the structural features which appeal to him are so different that the two authors scarcely seem to treat of the same class of animals. The anatomy of the test also receives elucidation from MORTENSEN (194–195), who specially discusses the homologies of pedicellariae. TORNQUIST's study of the apex in *Schizaster* (268) will help the classification of this difficult genus; I regret my inability to record his paper on Eocene fossils from Madagascar. The existence of an inner and outer series of plates in the ambulacrum of *Palaeodiscus*, as maintained by Sollas, is confirmed by SPENCER (264) who also confirms the views of Roemer, Meek, and Jaekel as to the structure of the food-groove in *Agelacriniidae*. The paper deserved better proof-reading than papers seem to get with our leading society.

Physiology, Bionomics, Auxology.—OESTERGREN (204) publishes an interesting note, and UEXKULL (274) a profound and fascinating study, of Ophiurid arm-movements. The reproduction of Starfish from isolated rays is convincingly proved by MONKS (193) & KELLOGG (139). SCHMIDT's (246) exact description of the early stages in *Echinus* larva should be useful for comparison with experimental results, while DELAGE's account (52) of *Asterias* larvae, though based on parthenogenetic individuals, contains facts of value to the morphologist, who will of course also read MACBRIDE (172) on *Ophiothrix*, and should glean something from the numerous descriptions of minute individuals and of growth stages in various Echinoids which enrich the pages of AGASSIZ (3). Miss KLEM's (142) criticism of Jackson & Jaggard's work on the growth of *Melonites* is not

immediately intelligible. Among papers on experimental embryology one cannot refrain from noting the beautiful experiments of GARBOWSKI (94) and the startling fact incidentally announced by JANSSENS (136) that all the experts at Naples, trying all methods on all manner of material for a whole breeding season could not get a solitary case of parthenogenesis.

III. DISTRIBUTION. The chief interest of the following papers is faunistic. On the Ophiurids collected by the 'M. Sars' GRIEG (106) bases an interesting discussion of the cold-water fauna of the North Sea and its limits, and deals in similar manner with the *Crinoidea* (107). CLARK (38) revises and describes the Echinoderm fauna of Woods Hole. KOEHLER's study of 'Siboga' Ophiurids (143) extends the range of many species and emphasizes the wide bathymetric limits of others. FOURTAU (83) gives an interesting account of the recent and Pleistocene Echinoid fauna of the Gulf of Suez, and draws conclusions as to its connections with the Indian Ocean and the Mediterranean.

ROWE (235) extends his zoning of the English Chalk to the Yorkshire coast which presents several remarkable features of Echinoderm distribution, e. g. *Zeuglopleurus rowei* in Marsupites zone, *Infulaster rostratus* from zone of *M. cortestudinarium* to that of *Actinocamax quadratus*, and *Cardiaster ananchytis* from *M. coranguinum* to *A. quadratus* zone. The bionomics of Solenhofen Echinoderms are studied by WALTHER (281). FRAIPONT (85) publishes photographs of Echinoderms from the Black Marble of the Belgian Carboniferous, a fauna hitherto undescribed and unfortunately too ill preserved for satisfactory determination. *Hemiaster cubicus* has been largely quoted from Sinai, but in the collections at his disposal NEWTON (196) finds only *Linthia oblonga*.

IV. SYSTEMATIC. The classification of *Echinoderma* both recent and fossil, down to subgenera, given by DELAGE & HÉROUARD (54) is valuable as giving a more complete list of names than can be found in any existing work on the subject, with an index showing synonyms and even misprints. The adoption of such groups as *Palasteridae* and *Euasteridae*, or *Palophiuridae* and *Colophiuridae*, the separation of *Synapta* from all other Holothurians, and the division of Inadunate Crinoids into *Larviformida* and *Fistulida* are steps possibly warranted but certainly retrograde. The formation of Family names by the addition of *-inae* to the full name of a genus (e. g. *Ophiiohelusinae*) accords neither with etymology nor the custom of systematists. These and similar vagaries of nomenclature, though indexed in this Record, are not emphasized as novelties. Under *Asteroidea*, however, the authors propose the new generic names *Echinodiscaster* for *Echinodiscus* Stürtz, and *Calvasterias* for *Calveria hystrix* [better known as *Korethraster hispidus*], while they mention *Goniodon*, as well as the Ophiurid *Astrodia*, now first indexed as new genera. The details of their classification of *Echinoidea* are largely due to MORTENSEN.

MISS KLEM's (142) bibliography and list of palaeozoic Echinoids is a useful aid to the memory, but should not be trusted implicitly. Among recent sea-urchins BELL (22) founds *Eobriassus*, a new Spatangoid. The memoir on Panamic deep-sea Echinoids by AGASSIZ (3) is less systematic than morphological; it contains a new genus, *Pilematechinus*, also *Centrocidaris*, a new subgenus of a genus not stated, and much condemnation of De Meijere & Mortensen. The latter (195) in describing Regular Echinoids collected in the Gulf of Siam, gives a fresh classification of the Subclass, and a most careful study of *Diadematidae* and *Temnopleuridae*; in the matter of new genera his restraint is commendable. His taxonomic methods are followed by DE MEIJERE (57), who describes new species of Echinoids and one new genus, *Selenechinus*, from the Malay Archipelago, and redescribes the interesting *Echinocorytidae* and *Pourtalesidae* introduced in his preliminary note; his summary of results is welcome to those who cannot stomach the details of spines and spicules. In describing new

species of *Plesiolampas* and *Hemiaster* from the Eocene of N. Nigeria, BATHER (18) considers the nature of the heteronomy more important for classification than the fascioles. P. DE LORIOU (162) describes many species, new and old from Patagonia, among them a new Asteroid genus *Lahillea*, a name perilously close to *Lahillia* Cossmann 1899; also an Echinoid fauna from Honduras similar to that in the Comanche series of Texas; finally he believes that he has discovered the type-specimen of that contentious species *Scutella striatula* M. de Serres.

The type-specimens of many inadequately described or figured species of Ophiurids are redescribed by KOEHLER (144). Among 151 species of deep-sea Ophiurids collected by the 'Siboga,' the same author (143) finds 112 new species and the new genera *Ophiopallas*, *Ophiocirce*, *Ophiomoeris*, *Ophiocrates*, *Ophiomidas*, *Ophiolutece*, *Ophiochrysis*, *Ophiodoris*, *Ophiomytis*, and *Astrocharis*.

Following up the observations of Mortensen, GRIEG (107) shows the systematic value of genital pinnules and other small points in *Antedon*. American Crinoids of Devonian age are revised and described by Miss WOOD (291), who founds the new genera *Tripleurocrinus* and *Tylocrinus*. In a valuable study of various Devonian and Silurian Cystidea of N. America, SCHUCHERT (249) introduces the new genera *Tetracystis* and *Trimerocystis*; his discussion of *Cumaroocrinus* is the most convincing yet published.

The following table gives the numbers of the new names proposed, so far as can be ascertained from ordinary perusal of the works recorded.

	New genera	Altered generic names	New sub- genera	New species	Altered specific names	New varr.
Holothurioidea	0	0	0	7	0	0
Echinoidea	3	0	1	50	0	4
Asteroidea	2	2	0	9	0	0
Ophiuroidea	11	0	0	114	0	1
Crinoidea	2	0	0	32	1	8
Cystidea	2	0	0	11	0	1
Blastoidea	0	0	0	0	0	0
Total	20	2	1	223	1	14

CORRIGENDA in previous Records.

Record for 1894, vol. XXXI:—

p. 43. *Freyella spinosa*. For 'Soudan' read 'N.E. of C. Verd Is.'

Record for 1901, vol. XXXVIII:—

p. 10. No. 22. BEEDE, J. W. Reference should read "Tr. Kansas Ac. xvi, pp. 70-84 (June, 1899)."

p. 11. No. 36. BOESE, E. After "vertiente" insert "oriental."

Record for 1903, vol. XL:—

p. 32. No. 282. SAVIN, L. This is an abstract of SAVIN (247) Zool. Rec. 1902.

The Recorder is always glad to receive corrections, and would be specially grateful if Authors, Editors, or Publishers would occasionally enable him to remove the asterisk indicating that a work has not been seen.

Further personal remarks by the Recorder are placed in [].

I. TITLES.*

- ABDERHALDEN, E. See FUEHNER, H. (90).
1. ABRIC, P. A propos de la fécondation spermatozoïdale et chimique et de la parthénogénèse. C.R. Soc. Biol. Ivii, pp. 271, 272. (28 Oct.)
[II, F, viii.]
 - ACKERMANN, A. (2) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. ix, p. 839. (30 Dec. 1902.)
 2. ACLAND, H. D. On a new cave on the eastern side of Gibraltar. Quart. J. Geol. Soc. lx, pp. 30-36, 2 text-figg., pl. vi. (15 Feb.)
[III, B, ii, b.]
 3. AGASSIZ, A. The Panamic deep sea Echini (being No. 32 of Reports on an exploration... by the U. S. ss. "Albatross," during 1891...) Mem. Mus. Harvard, xxxi, x+246 pp. (5 blank), cxii pls., 319 text-figg. (Nov.)
[II, A, iii : B, i, c, 2, 5 ; ii, c ; iii, a : c, vii : F, vi, c, 5 ; vii, c. III, A, i, ii, iv. IV, c.]
Abstract : in LUDWIG (166).
 - AIRAGHI, C. (2 & 3) Zool. Rec. 1903. Abstracts : by VINASSA, Geol. Centrbl. iv, p. 729 (1 Mar. 1904) & vi, p. 310 (15 Mar. 1905).
 4. ALBERT [HONORÉ CHARLES] (Prince de MONACO). Sur la 5^e campagne scientifique de la Princesse Alice II. C.R. Ac. Sci. cxxxviii, pp. 1398-1400. (June.)
[III, A, ii.]
 5. ALBERT, F. Los perjuicios que causan las estrellas de mar a la pesquería. Act. Soc. Chili, xii, pp. 279-284. (Jan. 1903.) [II, E, ii.]
 6. ALBRECHT, E. Ueber die Bedeutung myelinogener Substanzen im Zelleben. Verh. Deutsch. path. Ges. vi, pp. 95-109. [II, F, iii, c.]
 7. AMI, H. M. Preliminary lists of the organic remains occurring in the various geological formations comprised in the map of the Ottawa district, including formations in the provinces of Quebec and Ontario, along the Ottawa River. Appendix to Report on the geology and natural resources of the area included in the map of the city of Ottawa and vicinity, by R. W. ELLS. Rep. Geol. Surv. Canada (n. s.), xii, pp. 49G-77G. (1901.)
[III, B, iv, h.]
 8. —. Lists of fossils obtained from the several formations along the Ottawa River pertaining to the report on sheet No. 121, Quebec and Ontario (Grenville sheet). Appendix to Report on the geology of Argenteuil, Ottawa and part of Pontiac counties, &c., by R. W. ELLS. Rep. Geol. Surv. Canada (n. s.), xii, pp. 139J-143J. (1901.)
[III, B, iv, h.]
 9. ANDERSSON, K. A. ... "Brutpflege bei *Antedon hirsuta*"... [read before] Naturvetenskapliga Studentsällskapet, Upsala. Zool. Anz. xxvii, p. 662. (14 June.)
Preliminary to ANDERSSON (10).
 10. —. Brutpflege bei *Antedon hirsuta* Carpenter. Wiss. ergebn. Schwedisch. Südpolar Expedition 1901-1903. Bd. v, Lief. 1, 8 pp., ii pls.
[II, B, i, f, 12 ; iii, c : F, iii, f ; iv, f ; vii, f.]
Abstract : in LUDWIG (166).

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

The Symbols in [] refer to the divisions of the Subject-Index, II, III, IV. Those referring to the Systematic portion [IV, A-K] are inserted only when some question of definite importance to the systematist is dealt with in the work. The names of the genera mentioned in any work can generally be gathered from the lists given under Distribution [III, A or B], and the species can then be traced by turning to Section IV. Only where this was not possible have names been inserted after the title.

11. ANDREWS, E. A. Notes on the fauna of Jamaica. Johns Hopkins Univ. Circ. xi, pp. 72-77. (April, 1892.) [II, F, iv. III, A, ii.]
12. [ANON.] A retrospect of palaeontology in the last forty years. Geol. Mag. (n. s.) dec. v, vol. i, pp. 49-56. (Feb.) [II, E, iv.]
 ARIOLA, V. (11) Zool. Rec. 1902. Also appeared as Boll. Mus. Genova, 1901, No. 111, pl. ix. (1901.) Abstract by H. LUDWIG, Zool. Centrbl. x, p. 78 (10 Feb. 1903).
13. —. La merogonia e l'ufficio del centrosoma nella fecondazione merogonica. Atti Soc. Ligustica, xv, pp. 40-50. (Mar.) [II, F, viii.]
14. ARMASCHESKY, P. Obshchaya gheologhicheskaya Karta Rossii. List 46-1 Poltava-Khar'kov-Oboyan. (Allgemeine geologische Karte von Russland. Blatt 46. Poltawa-Charkow-Obojan.) Trudui geol. Kom. xv, No. 1, vi+318 pp., 1 map. (1903.) [III, B, iii, b, 1.]
 ARNOLD, R. See HAEHL, H. L. (110).
 BAERTLING, R. See FOLLMANN, O.
15. BARRON, T. On the occurrence of Lower Miocene beds between Cairo and Suez. Geol. Mag. (n. s.), dec. v, vol. i, pp. 603-608. (Dec.) [III, B, ii, d.]
 BARTHELS, P. (14) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 79. (10 Feb. 1903.)
16. BASEDOW, H. Note on Tertiary exposures in the Happy Valley District, with description of a new species of *Septifer*. Tr. R. Soc. S. Austral. xxviii, pp. 248-252, 1 text-fig. [III, B, ii, f.]
17. BATHER, F. A. How sea-urchins are turned into flint. [In illustration of] Labelling of objects in the Geological Department, British Museum of Natural History. Geol. Mag. (n. s.), dec. v, vol. i, pp. 218-219. (May.) [II, D, x: E, i, c.]
18. —. Eocene echinoids from Sokoto. Geol. Mag. (n. s.) dec. v, vol. i, pp. 292-304, pl. xi. (July.) [II, B, i, c, 2, 5. III, B, ii, f. IV, c.]
 See also remarks by Author and by R. B. NEWTON, Geogr. J. 1904, pp. 518-522 (Nov. 1904); by A. DE LAPPARENT, C.R. Ac. Sci. cxxxix, p. 1186 (Jan. 1905).
 Abstracts: in J. R. Micr. Soc. 1904, p. 535 (Oct.): Bibl. geogr. ann. xiv, item 802 (15 Sept. 1905): by Author, Geol. Centrbl. iv, p. 586 (Oct. 1904). Review: by J. LAMBERT, Rev. paleozool. ix, pp. 47-48 (Jan. 1905).
 —. See also Fox, H. (84), GRÖNWALL, K. A. (109).
19. BAUMBERGER, E. Fauna der untern Kreide im westschweizerischen Jura. I. Teil. Stratigraphische Einleitung. Abh. Schweiz. Ges. xxx, 60 pp., iii pls. (1903.) [III, B, iii, b, 2.]
20. —. Beiträge zur Kenntnis der Kreidebildungen auf dem Tessenberg und im Jorat (Bernjura). Mt. Ges. Bern 1903, pp. 6-16, 4 text-figg. [III, B, iii, b, 2.]
21. BEEDE, J. W. & ROGERS, A. F. Coal Measure faunal studies. III—Lower Coal Measures. Kansas quart. xii, pp. 459-473 [=Kansas Univ. Bull. ii, No. 15]. (June.) [III, B, iv, d.]
 BELL, F. J. (17) & (19) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 73 (10 Feb. 1903).
22. —. Description of a new genus of Spatangoids. Ann. Nat. Hist. (7), xiii, pp. 236-237. (March.) [III, A, iii. IV, c, *Eobriissus*.]
 Abstract in J. R. Micr. Soc. 1904, p. 311 (June).

- 22A. [BELL, F. J.] The Echinoderma found off the coast of South Africa. Part I. Echinoidea. Marine investigations in S. Africa, vol. iii, pp. 167-175 (5 Oct.). [II, B, iii, b. III, A, iii. IV, c.]
23. BELLINI, R. Notizie sulle formazioni fossilifere neogeniche recenti della regione vulcanica napoletana e malacofauna del Monte Somma. Boll. Soc. Napoli, xvii, pp. 1-16. (20 Jan.) [III, B, ii, b.]
24. BERG, L. Zamyetka o verkhne-myslov'ikh Otlozheniyakh na bereghakh Aral'skagho morya. (Eine Notiz über Obercretaceische Ablagerungen an den Ufern des Aralsees [Vorläufige Mitteilung].) Bull. Soc. Moscou, 1903, Beilage, pp. 8-12. [III, B, iii, b, I.]
Abstract: by A. W. PAVLOW, Geol. Centrbl. iv, pp. 711-712 (1 March 1904).
- BERGH, R. S. See BOVERI, T., BULLER, A. H. R., DELAGE, Y., DRIESCH, H., HERBST, C., LOEB, J., STEINBRUECK, H., STEVENS, N. M., TEICHMANN, E., VIGUIER, C., ZIEGLER, H. E.
25. BERGMANN, W. Bericht ueber die wissenschaftlichen Leistungen in der Naturgeschichte der Echinodermen während des Jahres 1892. Arch. Naturg. lxiii, pp. 239-282. (Dec.) [II, E, iii.]
26. BERTOLO, P. Ricerche chimiche sopra le uova del riccio di mare (*Strongylocentrotus lividus*). Boll. Acc. Gioen. lxxix, pp. 12-26. [II, B, i, c, 12: c, vii.]
27. BERTRAND, G. Recherches sur l'existence normale de l'arsenic dans l'organisme. Res. Camp. Scient. Monaco, xxiv, 30 pp. (1 Sept. 1903.) [II, c, vii: E, i, b.]
- BLANCKENHORN, M. See FOURTAU, R. (83).
28. BOEHM, J. Ueber die Obertriadische Fauna der Bäreninsel. Svenska Ak. Handl. xxxvii, No. 3, 76 pp., vii pls. (1903 [i.e. 1904].) [III, B, iii, e.]
29. BOHN, G. Influence du milieu extérieur sur l'oeuf. Parthéno-génèses expérimentale et naturelle. Rev. gen. Sci. xv, pp. 242-250. (15 Mar.) [II, F, viii.]
30. BOULE, M. Sur de nouveaux fossiles de la côte orientale de Madagascar. Bull. Soc. geol. France (4), iv, pp. 172, 173. (Aug. [recd. in London June, 1905].) [III, B, iii, b, I.]
- BOVERI, T. (23) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centrbl. x, pp. 885-887 (15 Dec. 1903).
31. —. Noch ein Wort ueber Seeigelbasterde. Arch. Entwickmeh. xvii, pp. 521-525. (8 Jan.) [II, F, viii.]
Abstracts: by R. Fick, Zool. Centrbl. xi, p. 818 (30 Dec. 1904); by O. MAAS, Zool. Centrbl. xii, p. 73 (28 Feb. 1905).
32. BRANNER, J. C. The stone reefs of Brazil, their geological and geographical relations, with a chapter on the coral reefs. Bull. Mus. Harvard, xliv, 286 pp., xcix pls. (May.) [II, D, x.]
- BRYCE, T. H. (35) Zool. Rec. 1902. Abstract by R. FICK, Zool. Centrbl. xi, pp. 20-22 (26 Jan. 1904).
- BULLER, A. H. R. (38) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. ix, pp. 671-672 (4 Nov. 1902).
- BURNE, R. H. See ROYAL COLLEGE OF SURGEONS (237).
33. BURNET, A. The Upper Chalk of North Lincolnshire. Geol. Mag. (n. s.), dec. v, vol. i, pp. 172-176. (April.) [III, B, iii, b, I.]
- CAULLERY, M. & SIEDLICKI, M. (28) Zool. Rec. 1903. Abstract by R. FICK, Zool. Centrbl. xi, p. 192 (19 April, 1904).

34. CAYEUX, L. Géologie des environs de Nauplie. Existence du Jurassique supérieur et de l'Infracrétacé en Argolide (Grèce). Bull. Soc. géol. France (4), iv, pp. 87-105, 3 text-figg. [II, D, x. III, B, iii, b, 2.]
35. CHADWICK, H. C. Report on the Crinoidea collected by Professor HERDMAN, at Ceylon, in 1902. Rep. Ceylon Pearl Oyster Fisheries, Part II, Supplem. Report xi, pp. 151-158, i. pl., 4to, London: Royal Society. (Oct.) [II, B, ii, d, 2; c: D, vii. III, A, iii. IV, F.]
36. CHAPMAN, F. On a collection of Upper Palaeozoic and Mesozoic fossils from West Australia and Queensland, in the National Museum, Melbourne. P. Soc. Victoria (n. s.), xvi, pp. 306-335, pls. xxvii-xxx. (March.) [III, B, iv, c.]
- CHECCHIA, G. (30) Zool. Rec. 1903. Abstract: by VINASSA, Geol. Centrbl. iv, p. 347 (1 Dec. 1903).
37. —. Osservazioni sulle Orbitoidi. Riv. ital. pal. xi, pp. 79-81. (15 May, 1905 [i.e. end of June].) [III, B, ii, f.]
- CHUN, C. (42) Zool. Rec. 1902. Abstract: by F. ZSCHOKKE, Zool. Centrbl. x, pp. 663-676 (2 Oct. 1903).
38. CLARK, H. L. The echinoderms of the Woods Hole region. Bull. U.S. Fish Comm. 1902, pp. 545-576, pls. i-xiv. [II, B, ii, c, d, 1: D, ix: E, i, a, b; ii: F, vii, b, c, d. III, A, ii. IV, B, c, D, E.]
39. CLARK, W. B. Systematic paleontology of the Miocene deposits of Maryland. Echinodermata. Maryland geol. Surv. Miocene, pp. 430-433, pls. cxix, cxx. [III, B, ii, d.]
40. CLARKE, J. M. & LUTHER, D.D. Stratigraphic and palaeontologic map of Canandaigua and Naples quadrangles. Bull. N. York Mus. lxiii, pp. 3-76. (June.) [III, B, iv, f.]
41. CLERC, A. Ferments digestifs de quelques Echinodermes. C.R. Soc. Biol. lvi, pp. 798-800. (20 May.) [II, c, iv.]
42. CLERC, M. Étude monographique des fossiles du Dogger de quelques gisements classiques du Jura Neuchatelois et Vaudois. Abh. Schweiz. pal. Ges. xxxi, 108 pp., iii pls. [III, B, iii, c, 3. IV, c.]
43. COLE, W. *Henricia sanguinolenta* in the Colne River. Essex Natural. xiii, p. 301. (Aug.) [III, A, ii.]
44. COLLET, P. Notices géologiques et paléontologiques pour servir à la géologie de l'arrondissement de Sainte-Mènehould. Avec la description des fossiles nouveaux par.....A. PERON et J. LAMBERT. Bull. Soc. Reims, xii, pp. 17-87, iii pls. on pp. 83, 85, 87; 20 text-figg. [III, B, iii, b, 1.]
45. *COMBES, P. Structure des radioles d'oursins. Le Cosmos (n. s.) I, pp. 9-12, 7 text-figg. [II, B, i, c, 4.]
46. COUFFON, O. Étude critique sur les faluns du Haguineau. Bull. Soc. Angers, xxxiii, pp. 35-93. [III, B, ii, d.]
47. —. Les faluns de l'Anjou et de la Touraine dans le Saumurois. Bull. Soc. Angers, xxxiii, pp. 216-223. [III, B, ii, d.]
48. COUTIÈRE, H. Note sur le commensalisme de *Parete dorsalis* var. *Pacificus* H. Coutière, d'après les notes de M. L. SEURAT, naturaliste, à Rikitea (îles Gambier). Bull. Mus. Paris, x, pp. 58-60. [II, D, viii, c.]
- CUSHMAN, J. A. See KLEM (142).
49. DAINELLI, G. La fauna eocenica di Bribir in Dalmazia. Parte 1^a. Palæontogr. ital. x, pp. 141-274, pls. xv-xvii. [III, B, ii, f.]

50. [DAINELLI, G.] Contributo allo studio dell' Eocene medio dei dintorni di Ostroviza in Dalmazia. Atti Acc. Lincei (5), xiii, Sem. 2, pp. 277-282. [III, B, ii, f.]
DALL, W. H. See REID, C. (225).
51. DEKHUYZEN, M. C. Ergebnisse von osmotischen Studien, namentlich bei Knochentischen, an der Biologischen Station des Bergenser Museums während eines Aufenthalts vom 23 Juli bis 27 Aug. 1904. [II, c, vii.]
DELAGE, Y. (64) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. x, pp. 110-112 (24 Feb. 1903).
52. —. Élevage des larves parthénogénétiques d'*Asterias glacialis*. Arch. Zool. exp. (4), ii, pp. 27-42, pl. ii, 12 text-figg. (15 April.) [II, E, i, b: F, v, d; viii.]
Abstracts: J. R. Micr. Soc. 1904, p. 420 (Aug.); LUDWIG (166).
53. —. La parthénogenèse par l'acide carbonique obtenue chez les oeufs après l'émission des globules polaires. Arch. Zool. exp. (4), ii, pp. 43-46. (15 April.) [II, F, viii.]
Abstract in LUDWIG (166).
54. — & HÉROUARD, E. Traité de zoologie concrète. III. Les Échinodermes. 8vo, x + 496 pp., liii pls., 565 text-figg. Paris: Schleicher. (1903 [i.e. 30 March, 1904, fide Schleicher frères & Cie. in litt.].)
The classification of the Regular Echinoids, except Palechinida, is by T. MORTENSEN. [II, A, iii: B, i (a-h) I: c, i: D, vii, a: E, i, d; iii: F, ii, a. III, A, i. IV, A-K.]
Review: by J. LAMBERT, Rev. paléozool. viii, pp. 188-190 (July, 1904).
55. DEL CAMPANA, D. Faunula del Giura superiore di Collalto di Solagna (Bassano). Boll. Soc. geol. Ital. xxiii, pp. 239-269, pl. vii. (12 Aug.) [III, B, iii, c, I.]
56. —. Contributo allo studio del Trias superiore del Montenegro. Atti Acc. Lincei, xiii, Rendiconti, pp. 554-559. (4 Dec.) [III, B, iii, e.]
DE MEIJERE, J. C. H. (53) Zool. Rec. 1903. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 78 (10 Feb. 1903).
57. —. Die Echinoidea der Siboga-Expedition. Uitkomst. H. M. Siboga.....utgegeven Max Weber, Monogr. xliii. 4to, 252 pp., xxiii pls. Leiden: Brill. (Feb.) [II, A, iii: B, i, c, 5, 6; ii, c; d, 2: D, iii, c: F, vii, c. III, A, iii. IV, c.]
Abstract in LUDWIG (166).
- DENDY, A. See HUTTON, F. W. (129).
58. DENNANT, J. & KITSON, A. E. Catalogue of the described species of fossils (except Bryozoa and Foraminifera) in the Cainozoic fauna of Victoria, South Australia and Tasmania. Rec. Geol. Surv. Victoria, i, pp. 98-147, map. (1903.) [III, B, ii, a.]
DE REGNY, V. See VINASSA DE REGNY, P. [E.]
59. DESTINEZ, P. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. Ann. Soc. geol. Belgique, xxxi, pp. M 143-M 151. (18 Jan.) [III, B, iv, e.]
60. —. Faune et flore des psammites du Condroz (Famennien). Ann. Soc. geol. Belgique, xxxi, pp. M 247-M 257. (21 July.) [III, B, iv, f.]
61. DE VESCOVI, P. Notizie sulla formazione di un nuovo lago nella provincia di Roma e considerazioni dal punto di vista della fauna lacustre. Boll. Soc. zool. Ital. v, pp. 55-71. (1896.) [III, B, ii, c.]
Abstract: by R. MELI, Boll. Soc. geol. Ital. xxiii, p. lvii (1904).

62. DIBLEY, G. E. The discovery of Marsupites in the Chalk of the Croydon area. *Geol. Mag. (n. s.)*, dec. v, vol. i, pp. 525-526. (Oct.) [III, B, iii, b, I.]
63. DI MAURO, S. Sopra un nuovo infusorio ciliato parassita dello *Strongylocentrotus lividus* e dello *Sphaerechinus granularis* (*Anophrys echini* n. sp.). *Boll. Acc. Gioen.* lxxxi, pp. 13-20, text-figg. (May.) [II, D, viii, c.]
64. DOFLEIN, F. Brachyura. *Wiss. Ergebn. Deutsch. Tiefsee-Exped. Valdivia*, vi. [II, D, viii, b.]
65. DOLLFUS, G. F. Faune malacologique du miocène supérieur de Rennes (étage Redonien, gîte d'Apigné) (Ille-et-Vilaine). *C.R. Ass. Franc.* xxxii, 2^e Part, pp. 656-663. (1903.) [III, B, ii, d.]
66. DOUVILLÉ, H. Notice sur les travaux scientifiques de M. Henri Douvillé. 4to, 110 pp., 165 text-figg. Lille: Bigot frères. (1903.) [II, A, iii: B, i, a, 4; c, 5: D, iii, c. IV, c.]
Abstract by E. HAUG, *Geol. Centrbl.* v, p. 492 (15 Sept. 1904).
67. —. Nummulitique du Sud-Ouest. *Bull. Soc. geol. France* (4), iv, pp. 283-284. (Oct. [recd. in London, Jun. 1905]). [III, B, ii, f.]
68. —. Sur quelques fossiles de Madagascar. *Bull. Soc. geol. France* (4), iv, pp. 207-217, pl. viii. (Aug. [recd. in London, Jun. 1905].) [III, B, iii, b, 2; c, I, 3.]
69. DOUXAMI, H. Feuilles de Chambéry et Albertville. Revision de Nantua et Annecy. *Bull. Carte geol. France*, x, pp. 185-191, 2 text-figg.; pp. 558-562, 2 text-figg. (1898, 1899.) [III, B, ii, d.]
70. DOWLING, D. B. Report on an exploration of Ekwan River, Sutton Mill Lakes and part of the west coast of James Bay. [includes] Appendix I.—Preliminary list of fossils by J. F. WHITEAVES, *Ann. Rep. Geol. Surv. Canada*, xiv, Part F, pp. 1-60, pls. i, ii, text-figg. (Oct.) [III, B, iv, g.]
71. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf (Westerwald). *Palæontogr.* 1, pp. 229-288, pls. xxviii-xxxii. (March.) [III, B, iv, f.]
- DRIESCH, H. (72) *Zool. Rec.* 1902. Abstract by R. S. BERGH, *Zool. Centrbl.* ix, pp. 772-774 (16 Dec. 1902). (69) *Zool. Rec.* 1903. Abstract by O. MAAS, *Zool. Centrbl.* xii, p. 72 (28 Feb. 1905).
- DUBOIS, A. See SCHARDT, H. (244).
72. DUBOIS, R. Du cuivre normal dans la série animale (Animaux marins et terrestres). *Ann. Soc. Linn. Lyon*, xlvii, pp. 93-97. (1901.) [II, c, vii.]
Abstract: see DUBOIS (99) *Zool. Rec.* 1900.
73. DUBUISSON, H. Dégénérescence des ovules. *C.R. Soc. Biol.* lvii, pp. 554-555. (16 Dec.) [II, F, viii.]
- DUN, W. S. See ETHERIDGE, R. (75).
- DUNGERN, E. v. (75) *Zool. Rec.* 1902. Abstract by M. RADWAŃSKA, *Kosmos Polski*, xxix, pp. 116-120 (Apr. 1904). (71) *Zool. Rec.* 1903. Abstract by R. FICK, *Zool. Centrbl.* xi, p. 162 (19 Apr. 1904).
- ELLS, R. W. See AMI, H. M. (7 & 8).
- ENRIQUES, P. (73) *Zool. Rec.* 1903. Abstract by H. LUDWIG, *Zool. Centrbl.* x, p. 149 (10 Mar. 1903).
- ESCH, E. See OPPENHEIM, P. (201), SOLGER, F. (258).
74. ETHERIDGE, R. JUN. Notes on Australian Cretaceous fossils. *Rec. Austral. Mus.* v, pp. 248-252, pls. xxvii, xxviii. (16 Jun.) [III, B, iii, b, I. IV, F.]

75. [ETHERIDGE, R. JUN.] The occurrence of *Pisocrinus*, or an allied genus, in the Upper Silurian rocks of the Yass district. Rec. Austral. Mus. v, pp. 287-292, pl. xxxvii. (22 Dec.) [III, B, iv, a, g. iv, F.]
Abstract: by W. S. DUN, Geol. Centrbl. vi, p. 571 (1 June, 1905).
FARQUHAR, H. See HUTTON, F. W. (129).
76. FEARNSIDES, W. G. On the occurrence of a limestone with Upper Gault fossils at Barnwell, near Cambridge. Quart. J. Geol. Soc. lx, pp. 360-363. (15 Aug.) [III, B, iii, b, 2.]
FICK, R. See BOVERI (31), BRYCE, T. H., CAULLERY, M., DUNGERN, E. VON, FISCHER, M. H., GUENTHER, K., HARTMANN, M., LOEB, J., LOEB (155), SCHUECKING, A., WEDEKIND, W.
77. FIEDLER, O. Ueber Versteinerungen aus den Arlbergschichten bei Bludenz und einige neue Fundorte von Flysch und Aptychenkalken im oberen Grossen Walser-Tal Vorarlbergs. Zeitschr. Deutsch. geol. Ges. lvi, Briefl. Mitt. pp. 8-13. [III, B, iii, e.]
78. FINCKH, A. E. Biology of the reef-forming organisms at Funafuti atoll. Royal Society's Report on Funafuti, pp. 125-150. (Feb.) [II, D, iii, c; iv, b; x.]
FISCHER, M. H. (83) Zool. Rec. 1903. Abstract by R. FICK, Zool. Centrbl. xi, p. 22. (26 Jan. 1904.)
79. FLEGEL, K. Ueber das Alter der oberen Quader des Heuscheuergebirges. Centrbl. Mineral. 1904, pp. 395-399. [III, B, iii, b, 1.]
FLIEGEL, F. See JAEKEL, O.
80. FOERSTE, A. F. The Ordovician-Silurian contact in the Ripley Island area of Southern Indiana, with notes on the age of the Cincinnati geanticline. Amer. J. Sci. (4), xviii, pp. 321-342, 1 pl. (Nov.) [III, B, iv, g.]
FOLLMANN, O. (114) Zool. Rec. 1901. Abstracts by E. KOKEN, N. Jahrb. Min. 1905, i, p. -181- (Feb.); by R. BÄRTLING, Geol. Centrbl. vi, p. 525 (15 May, 1905).
81. FORTIN, R. "Un Echinide provenant du Cénomane de la vallée de l'Oison... *Peltaster umbrella* Agass." Bull. Soc. Rouen (4), xxxix, p. 126. [III, B, iii, b, 1.]
— See also NIBELLE, M. (197).
82. FOURTAU, R. Contribution à l'étude de la faune crétacique d'Égypte. Bull. Inst. Egypt. (4), iv, pp. 231-349, pls. i-v. [III, B, iii, b, 1.]
83. —. Contribution à l'étude des Échinides vivant dans le Golfe de Suez. Bull. Inst. Egypt. (4), iv, pp. 407-446, 1 pl. (Dec.) [II, D, ix: E, iv. III, A, iii: B, ii, b, c. IV, C.]
Abstracts: by J. LAMBERT, Rev. paleozool. ix, p. 164 (July, 1905); by M. BLANCKENHORN, Geol. Centrbl. vii, p. 48 (Sept. 1905).
84. FOX, H. Supplementary notes on some coast sections in the parish of St. Minver. [containing note on echinoderms by F. A. BATHER.] Tr. geol. Soc. Cornwall, xii, pp. 747-752, 1 pl. (Mar.) [III, B, iv, f.]
FOX-STRANGWAYS, C. See STRANGWAYS, C. F. (266).
85. FRAIPONT, J. Contribution à l'étude de la faune du Calcaire carbonifère de Belgique. i. Échinodermes du marbre noir de Dinant (Viséen inférieur, VIa). Ann. Soc. geol. Belgique, ii, Mém. pp. 1-12, pl. i-v. [III, B, iv, e. IV, C, D, F.]
Review: by A. TORNUST, N. Jahrb. Min. 1905, ii, p. 147 (15 July, 1905).
86. FRITEL, P. H. Echinodermes fossiles. Les Oursins [continued]. Naturaliste, xxiv, pp. 185-188, 10 text-figg. (15 Aug. 1902.) [III, B, i. IV, C.]

87. [FRITEL, P. H.] [Same continued.] *Naturaliste*, xxvi, pp. 65-67, 14 text-figg. (15 Mar.) [III, B, i. IV, C.]
88. FRIČ [FRITSCH], A. O lobolitu ze spodního siluru. [A Lobolith from the Lower Silurian.] *Vesník*, xxxiii, p. 277. 1 text-fig. [II, B, i, f, 5. III, B, iv, h. IV, F.]
Abstract: by PERNER, *Geol. Centrbl.* vi, p. 59. (15 Jan. 1905.)
- FUCHS, T. (89) *Zool. Rec.* 1902. Abstract by J. MEISENHEIMER, *Zool. Centrbl.* ix, p. 758 (16 Dec. 1902).
89. FUEHNER, H. Ueber die Einwirkung verschiedener Alkohole auf die Entwicklung der Seeigel. *Arch. exp. Path.* li, pp. 1-10, 9 text-figg. (1903.) [II, F, viii.]
Abstract: in LUDWIG (205) *Zool. Rec.* 1903.
90. —. Pharmakologische Studien an Seeigeleiern. Der Wirkungsgrad der Alkohole. *Arch. exp. Path.* lii, pp. 69-82, 7 text-figg. [II, F, viii.]
Abstracts: in LUDWIG (166); by E. ABDERHALDEN, *Arch. Rassen*, i, pp. 755-756 (1904).
91. FUERTH, O. v. Vergleichende chemische Physiologie der niederen Tiere. xiv+670 pp., 8vo, Jena: Fischer (1903). [II, C, i: F, viii.]
Abstract: in LUDWIG (205) *Zool. Rec.* 1903.
92. FUGGER, E. Die oberösterreichischen Voralpen zwischen Irrsee und Traunsee. *Jahrb. geol. Reichsanst.* liii, pp. 295-350, pl. xiv, 11 text-figg. (30 Dec. 1903.) [III, B, ii, f; iii, b, I.]
- GAGEL, C. (97) *Zool. Rec.* 1903. Review by J. LAMBERT, *Rev. paleozool.* ix, p. 163. (July, 1905.) [IV, c, *Chuniola*, *Marettia*, *Spatangus*.]
93. GARBOWSKI, T. O rozwoju partenogenetycznym rozgwiad. (Ueber Parthenogenetische Entwicklung der Asteriden.) *Bull. Ac. Cracovie*, 1903, pp. 810-830, pl. xviii. (13 Jan.) [II, F, viii.]
Abstract in LUDWIG (166).
94. —. O transplantacji blastomer u jeżowców. (Ueber Blastomeren-transplantation bei Seeigeln.) (Vorläufige Mitteilung.) *Bull. Ac. Cracovie*, 1904, pp. 169-183. (21 Apr.) [II, F, viii.]
Abstract in LUDWIG (166).
95. GARDINER, J. S. The Maldive and Laccadive Groups, with notes on other coral formations in the Indian Ocean. *Fauna & Geogr. Mald. Laccad. Archip.* i, pp. 12-50, 146-183, 313-346, 376-428, xii pls., 30 text-figg. (1901/03.) [II, D, iii, a; iv, b, c; x.]
96. —. Notes and observations on the distribution of the larvae of marine animals. *Ann. Nat. Hist.* (7), xiv, pp. 403-410. (Dec.) [III, A, i.]
Prel. Report in *Nature*, lxx, p. 262 (14 July).
97. GAUTHIER, V. Illustrations des Echinides fossiles des terrains jurassiques de la Tunisie, recueillis... par G. Le Mesle. *Explor. Scient. Tunisie. Paleont. et Geol. Fasc.* iii. pt. xxxii [with explanation, no other text]. (1895 i.e. Nov. 1904.)
Retarded publication of the plate belonging to GAUTHIER (98) *Zool. Rec.* 1897, where the species are indexed.
98. GEMMILL, J. F. *Ichthyonema grayi* (Gemmill and v. Linstow). *Tr. Soc. Glasgow* (n. s.), vi, pp. 299-301. (Dec. 1903.) [II, D, viii, c.]
99. — & LINSTOW, O. von. *Ichthyonema grayi* Gemmill u. v. Linstow. *Arch. Naturg.* lxvii, i, pp. 113-118, pl. viii. (1902.) [II, D, viii, c.]

100. GIARD, A. Sur la parthénogenèse artificielle par dessèchement physique. C.R. Soc. Biol. lvi, pp. 594-596. (22 Apr.) [II, F, viii.] Abstract in LUDWIG (166).
101. GLANGEAUD, P. Le Portlandien du bassin de l'Aquitaine. Bull. Carte geol. France, x, pp. 25-61, 1 map, 9 text-figg. (1898.) [III, B, iii, c, 1.]
102. GOURDON, M. Note sur les Échinides Pyrénéens espagnols de la collection Maurice Gourdon, offerte au Muséum de Nantes. Bull. Soc. Ouest France (2), iv, pp. 215-225. (31 Dec.) [II, E, i, c. III, B, ii, f; iii, b, 1.]
- GRABAU, A. W. (109) Zool. Rec. 1903. Abstract by Author, Geol. Centrbl. iv, p. 537 (Oct. 1904).
- 102A. —. Stratigraphy of the Traverse Group of Michigan. Rep. State Geologist Michigan, 1901, pp. 161-210. (1902.) [III, B, iv, f.]
- GRAVE, C. (105) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. ix, p. 837 (30 Dec. 1902).
- GRAVIER, C. See PERRIER [J. O.] E. (211).
103. GREENE, G. K. Contribution to Indiana Palaeontology. Part xvii, pp. 168-175, pls. xlix-li. (9 May.) [III, B, iv. IV, F.] Descriptions of spp. of *Batocrinus* by R. R. ROWLEY.
104. —. Ditto. Part xviii, pp. 176-184, pls. lii-liv. (22 June.) [III, B, iv, f. IV, F.] Descriptions of spp. of *Echinoderma* by R. R. ROWLEY.
105. —. Ditto. Part xix, pp. 185-197, pls. lv-lvii. (20 July.) [II, B, ii, d, 2; e. III, B, iv, e, f. IV, F, H.] Descriptions of spp. of *Crinoidea* and *Blastoidea*, and a review of HAMBACH's "Revision of the Blastoidea," by R. R. ROWLEY.
- GRIEG, J. A. (113) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 73 (10 Feb. 1903).
106. —. Echinodermen von dem norwegischen Fischereidampfer "Michael Sars" in den Jahren 1900-1903 gesammelt. I. Ophiuroidea. Bergens Mus. Aarbog, 1903, No. 13, 45 pp., 4 text-figg. (March.) [II, B, ii, b, c: F, vii, e. III, A, ii. IV, C, D, E.]
107. —. Echinodermen von... "Michael Sars"... II. Crinoidea. Bergens Mus. Aarbog, 1904, No. 5, pp. 1-39, 3 text-figg. (Oct. ?) [II, B, i, f, 5: F, v, f. III, A, i, ii. IV, F.]
108. GRÖNWALL, K. A. Geschiebestudien, ein Beitrag zur Kenntnis der ältesten baltischen Tertiärablagerungen. Jahrb. geol. Landesanst. Berlin, xxiv, pp. 420-439, 5 text-figg. M. O. 60. [II, D, x. III, B, ii, f; iii, b, 1.]
109. —. Forsteningsførende Blokke fra Langeland, Sydfyn og Aegø samt Bemaerkninger om de aeldre Tertiaerdannelser i det baltiske Omraade. Résumé. Blocs fossilifères de l'île de Langeland, du sud de la Fionie et de l'île d'Aegø et remarques sur les dépôts tertiaires anciens du territoire baltique, pp. 55-62. Danmarks geol. Unders. II R, No. 15, viii+64 pp., 6 text-figg. 1 Kr. 75 Øre. (Dec.) [II, D, x. III, B, ii, f.] Specimens exhibited by F. A. BATHER, Abstr. P. Geol. Soc. London, Feb. 1905, p. 56.
- GUENTHER, K. (121) Zool. Rec. 1903. Abstracts: by R. FICK, Zool. Centrbl. xi, pp. 22-24 (26 Jan. 1904); in J. R. Micr. Soc. 1905, p. 166 (April).
110. HAEHL, H. L. & ARNOLD, R. The Miocene diabase of the Santa Cruz mountains in San Mateo County, California. P. Amer. Phil. Soc. xliii, pp. 15-53, 25 text-figg. [III, B, ii, c.]

111. HALL, T. S. Notes on some Victorian echinoids. *Victorian Natural.* xxi, pp. 70-73. (Sept.) [III, A, iv. IV, c.]
- 111A. HALLER, B. Lehrbuch der vergleichenden Anatomie. Lief. 1, vi, 424 pp., 412 text-figg. Jena: Fischer. (1902.)
[II, A, iii: B, i, a, 1; c, 5: E, i, d: F, v, a. IV, A.]
Echinodermen, pp. 109-153.
112. HAMANN, O. Echinodermen (Stachelhäuter). iv. Klasse. Echinoidea, Seeigel (Schluss). v. Klasse. Crinoidea, Seelilien. Bronn's Klassen und Ordnungen des Thierreichs, ii, Abth. 3, Lief. 65, 66, pp. 1367-1430. (Apr.) [II, B, i, f, 1: E, iii, iv. IV, c, F.]
Section G. Systematik, pp. 1367-1413 by M. MEISSNER.
HAMBACH, G. (126) *Zool. Rec.* 1903. Reviews: by J. LAMBERT, *Rev. paleozool.* ix, pp. 91-92 (Apr. 1905); by R. R. ROWLEY in *GREENE* (105). Abstract: in *J. R. Micr. Soc.* 1905, p. 58 (Feb.).
113. HARGITT, C. W. Some unsolved problems of organic adaptation. *Science* (n. s.), xix, pp. 132-145. (22 Jan.) [II, c, v.]
HARTMANN, M. (122) *Zool. Rec.* 1902. Abstract by R. FICK, *Zool. Centrbl.* x, pp. 290-291 (5 May, 1903).
114. HARTOG, M. Some problems of reproduction.-II. *Quart. J. Micr. Sci.* (n. s.), xlvii, pp. 583-608. [II, F, iv, a.]
HAUG, E. See DOUVILLÉ, H. (66).
115. HENNIG, A. Finnes en lucka emellan senon och danien i Danmark? [Is there a gap between Senonian and Danian in Denmark?] *Geol. Foren. Stockholm Forh.* xxvi, pp. 29-66.
[II, D, iii, f. III, B, iii, b, 1.]
Abstract: by J. LAMBERT, *Rev. paleozool.* viii, p. 192 (July, 1904).
— See also TÖRNEBOHM, A. E. (267).
116. HENRI, V. & LALOU, S. Régulation osmotique des liquides internes chez les échinodermes. *J. Physiol. Path.* vi, pp. 9-24.
[II, c, ii.]
- HERBST, C. [A.] (123) *Zool. Rec.* 1902. Abstract by R. S. BERGH, *Zool. Centrbl.* x, pp. 112-115 (24 Feb. 1903).
117. —. Ueber die zur Entwicklung der Seeigellarven nothwendigen anorganischen Stoffe, ihre Rolle und ihre Vertretbarkeit. III. Theil. Die Rolle der nothwendigen anorganischen Stoffe. *Arch. Entwick-mech.* xvii, pp. 306-520, pls. xiv-xvii. (8 Jan.) [II, F, viii.]
Abstract in LUDWIG (166).
118. —. Vorläufige Uebersicht ueber die Rolle der zur Entwicklung der Seeigellarven notwendigen anorganischen Stoffe. *Verh. Ver. Heidelb.* (n. s.), vii, pp. 367-394. (Feb.)
Condensed from HERBST (117).
119. —. Ueber die künstliche Hervorrufung von Dottermembranen an unbefruchteten Seeigeleiern. Zweite Mittheilung. Die Hervorrufung von Dottermembranen durch Silber Spuren. *Mt. Stat. Neapel*, xvi, pp. 445-457. (2 Dec.) [II, F, viii.]
Abstracts: *J. R. Micr. Soc.* 1905, p. 318 (June); LUDWIG (166).
- HERDMAN, JANE B. See HERDMAN, W. A. (120).
120. HERDMAN, W. A. & JANE B. Report on the Echinoderma collected by Professor Herdman, at Ceylon, in 1902. With notes and additions by F. J. BELL. Report Ceylon Pearl Oyster Fisheries, Part II, Supplementary Report x, pp. 137-150, 2 text-figg. 4to, London: Royal Society. (Oct.) [II, B, i, c, 5; ii, b, c: D, ii, c; iii, c; vii, e. III, A, iii. IV, D.]

- [HERDMAN, W. A.] See also CHADWICK, H. C. (35).
 HÉROUARD, E. (126 & 127) Zool. Rec. 1902. Abstracts by
 H. LUDWIG, Zool. Centrbl. x, p. 74 & p. 79. (10 Feb. 1903.)
 121. —. Théorie de la *Pentastomaea*. Bull. Soc. zool. France, xxix,
 pp. 70-81. (10 May.) [II, A, ii.]
 Abstracts: J. R. Micr. Soc. 1904, p. 534 (Oct.); LUDWIG (166).
 122. —. Nouveau procédé pour l'élevage des larves et des petits
 animaux. *Chlorella vulgaris* en culture pure. Bull. Soc. zool.
 France, xxix, pp. 110-114. (15 June.) [II, E, i, b: F, v, d.]
 —. See also DELAGE, Y. (54).
 HILL, W. See JUKES-BROWNE, A. J. (137).
 123. HIND, W. Life-zones in the British Carboniferous rocks. Rep.
 Brit. Ass. 1903, pp. 185-192. (Aug.) [III, B, iv, e.]
 124. HINDE, G. J. Report on the materials from the borings at the
 Funafuti atoll. Royal Society's Report on Funafuti, pp. 186-361.
 (Feb.) [III, B, ii, b.]
 125. —. On the zone of *Marsupites* in the Chalk at Beddington, near
 Croydon, Surrey. Geol. Mag. (n. s.) dec. v, vol. i, pp. 482-487.
 (Oct.) [III, B, iii, b, I.]
 126. HOLM, G. Kinnekulles berggrund. Sveriges geol. Unders. Afh.
 (Ser. C.) No. 172, pp. 1-76, pls. i & ii, text-figg. (1901.) Price of
 complete memoir 5 kr. [II, D, x. III, B, iv, h.]
 127. HOLMES, W. M. List of fossils collected. P. Croydon Club, 1903-
 04, pp. 45-46. [III, B, iii, b, I.]
 HORNE, J. See PEACH, B. N. (209).
 128. HUNTER, S. J. On the morphology of artificial parthenogenesis in
 the sea-urchin, *Arbacia*. Science (n. s.), xix, pp. 213-214. (5 Feb.)
 [II, F, viii.]
 129. +HUTTON, F. W. Index Faunae Novae Zealandiae. 8vo, viii +
 372 pp. London: Dulau, 12s. 6d. [III, A, iv.]
 Echinodermata on pp. 286-292. Holothurian list furnished by
 A. DENDY, Echinoids and Asteroids revised by H. FARQUHAR
 (see Preface).
 130. HYDE, IDA H. Differences in electrical potential in developing
 eggs. Amer. J. Physiol. xii, pp. 241-275. (1 Nov.) [II, F, iv.]
 131. JACKSON, H. C. The action of potassium cyanide upon the unfer-
 tilised egg. Science (n. s.), xix, pp. 105-106. (15 Jan.) [II, F, viii.]
 JAEKEL, O. (154) Zool. Rec. 1903. Abstract by FLIEGEL, Geol.
 Centrbl. vi, p. 59 (15 Jan. 1905).
 132. —. "Ueber sogenannte Lobolithen." Zeitschr. Deutsch. geol.
 Ges. lvi, pp. 59-63, Protok. [II, B, i, f, 5.]
 133. —. Ueber einen Pentacriniden der deutschen Kreide. SB. Ges.
 naturf. Berlin, 1904, pp. 191-196, i pl.
 [II, B, i, f, 5. III, B, iii, b, I. IV, F.]
 Abstract: by J. LAMBERT, Rev. palaeozool. ix, p. 161 (July,
 1905).
 134. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmisches
 Kreideformation. Jahrb. geol. Reichsanst. liv, pp. 75-90. (15 Sept.)
 [III, B, iii, b, I.]
 135. —. Vorläufiger Bericht ueber die Klippenfazies im böhmischen
 Cenoman. Verh. geol. Reichsanst. 1904, pp. 297-303. (30 Sept.)
 [III, B, iii, b, I.]

136. JANSSENS, F. A. Production artificielle de larves géantes et monstrueuses dans l'*Arbacia*. Cellule, xxi, pp. 247-294, pls. i-viii. [II, F, iii; viii.]
 Prelim. Notice (156) Zool. Rec. 1903. Abstract in LUDWIG (166).
137. JUKES-BROWNE, A. J. The Upper Chalk of England. With contributions by W. HILL. Mem. Geol. Surv. U. K. Cretaceous Rocks of Britain, vol. iii, x+566 pp., i pl., text-figg. 10s. (Mar.) [III, B, iii, b, 1. iv, c.]
 Review: Geol. Mag. (n. s.) dec. v, vol. i, pp. 277-280 (Jun. 1904).
138. KARAKASH, N. (KARAKASCH, N.). Gheologhicheskiya nablyudeniya po dolinam ryek Urukha, Ardon, Malki, Kichmalki i v okrestnostyakh Kislovodska. Observations géologiques dans les vallées des fleuves Ouroutch, Ardon, Malka, Kitchmalka et dans les environs de Kislowodsk sur le versant septentrional du Caucase. Trudui St. Peterb. Obshch. Sect. Geol. xxiv, pp. 1-28, i pl. (1896.) [III, B, iii, b, 1.]
 Abstract: by Author in Russian and German, in Annuaire geol. min. Russie, iii, pp. 164-171. (1899.)
139. KELLOGG, V. L. Restorative regeneration in nature of the starfish *Linckia diplax* (Müller & Troschel). J. exp. Zool. i, pp. 353-356, 6 text-figg. [II, D, vii, d.]
 Abstracts: in LUDWIG (166); in J. R. Micr. Soc. 1905, p. 598 (Oct.).
140. KIAER, H. Dyrelivet [Animal life] i Drøbaksund. Nyt. Mag. Naturv. xlii, pp. 61-89, pls. i, ii, 4 text-figg. (Feb.) [II, D, iii, a; viii, b: F, vii, d. III, A, ii.]
- KILIAN, W. & LEENHARDT, F. (159) Zool. Rec. 1897. Also reprinted in Ann. Univ. Grenoble, viii, pp. 209-222 (1897).
- . See also SAVIN, L.
- KITSON, A. E. See DENNANT, J. (58).
141. KITTL, E. Geologie der Umgebung von Sarajevo. Jahrb. geol. Reichsanst. liii, pp. 516-748, pls. xxi-xxiii, 47 text-figg., map. (10 Aug.) [III, B, iii, e; iv, e. iv, c, F.]
142. KLEM, MARY J. A revision of the Palaeozoic Palaeoëchinoidea, with a synopsis of all known species. Tr. Ac. St. Louis, xiv, pp. 1-98, pls. i-v. (5 May.) [II, B, ii, a: E, iii: F, vii, c. iv, c.]
 Reviews: by J. LAMBERT, Rev. paleozool. April, 1905, p. 93; by J. A. CUSHMAN, Amer. Natural. xxxix, pp. 754-756 (Oct. 1905).
 Abstracts: in J. R. Micr. Soc. 1905, p. 59 (Feb.); by R. RUEDEMANN, Geol. Centrbl. vi, p. 571 (1 June, 1905).
- KOEHLER, R. (155) Zool. Rec. 1902. Abstract: by H. LUDWIG, Zool. Centrbl. x, p. 78 (27 Jan. 1903).
143. —. Ophiures de l'expédition du Siboga. Ie. partie: Ophiures de mer profonde. Monogr. XLVa. Uitkomst. H. M. Siboga... uitgegeven Max Weber. 4to, 167 pp., xxxvi pls. Leiden: Brill. (Feb.) [II, B, i, e, 12; ii, c, d, 1, e: D, viii, e. III, A, iii. iv, E.]
 Abstract in LUDWIG (166).
144. —. Ophiures nouvelles ou peu connues. Mem. Soc. zool. France, xvii, pp. 54-119, 98 text-figg. [II, B, ii, c. III, A, iii. iv, E.]
- KOKEN, E. See FOLLMANN, O.
145. KOSTANECKI, K. Étude cytologique de la parthénogénèse artificielle des oeufs de *Mactra* sous l'influence de K Cl. (also entitled "Zmiany w jajku, etc." and "Ueber die Veränderungen, etc.") Bull. Ac. Cracovie, 1904, pp. 70-91. (7 March.) [II, F, viii.]

146. KRAEPELIN, K. Das Naturhistorische Museum. Hamburg in naturw. u. medizinisch. Beziehung, pp. 124-149, 9 text-figg. Hamburg (1901). [II, E, i, c.]
- KRAHELSKA, M. See LOEB, J.
- LALOU, S. See HENRI, V. (116).
- LAMBERT, J. (176) Zool. Rec. 1903. Abstract by author, Bull. Soc. Reims xiii, procès-verb. pp. iv-vi (10 Nov. 1904).
147. —. Sur quelques petits Hémiaster de la Craie blanche. Bull. Soc. Yonne, lvii, pp. 21-31. (March.) [III, B, iii, b, 1. IV, c.]
Abstract by author, Rev. paleozool. viii, pp. 191-192 (July, 1904).
148. —. Note sur l'Infralias de la Vendée et des Deux-Sèvres. iv. Échinides. Bull. Soc. géol. France (4), iii, pp. 538-545, pl. xviii. (March.) [III, B, iii, d. IV, c.]
Abstracts: by author, Rev. paleozool. viii, p. 191 (July, 1904);
by A. TORNUST, N. Jahrb. Min. 1905, ii, p. 147 (15 July, 1905).
- See also BATHER (18), COLLET (44), DELAGE (54), FOURTAU (83), GAGEL, C., HAMBACH, G., HENNIG (115), JAEKEL (133), KLEM (142), LEUTHARDT (152), LISSAJOUS (153), LORIOU (162), NEWTON (196), SCHUCHERT (249), SCHUETZE (251), SEGUIN, C., TORNUST (268), VINASSA DE REGNY, P., WOLLEMAN (290), WOODS (293).
149. LANG, A. Sul significato biologico della bellezza di una parte della fauna marina. Act. Soc. Helvet. lxxxvi, pp. 102-117. [II, B, i, a, 2.]
Abstracts: in Rev. Scient. (4), xx, pp. 760, 761 (12 Dec. 1903):
Arch. Sci. Nat. (4) xvi, pp. 594-596 (15 Nov. 1903).
150. LANGENHAN, O. Der mittlere und obere Muschelkalk des Seebergs mit ihren Versteinerungen. Naturw. u. Geschichtliches vom Seeberg, pp. 52-54. Gotha: Thieneinann. (1901.) [III, B, iii, e.]
151. LANZI, M. Diatomee contenute nel canale alimentare di Oloturie del Mediterraneo. Atti Acc. Pont. Lincei, lvii, pp. 172-179. [II, D, iv, b.]
- LAPPARENT, A. DE. See BATHER, F. A. (18).
- LEENHARDT, F. See KILIAN, W.
152. LEUTHARDT, F. Die Crinoidenbänke im Dogger der Umgebung von Liestal. Ber. naturf. Ges. Basel, 1902/03, pp. 89-115, pls. ii, iii, 2 text-figg. [II, D, x. III, B, iii, c, 3. IV, F.]
Abstracts: by O. WILCKENS, N. Jahrb. Min. 1905, i, p. -298- (April); by J. LAMBERT, Rev. paleozool. ix, p. 161 (July, 1905).
- LINSTOW, O. VON. See GEMMILL, J. F. (99).
153. LISSAJOUS, M. Échinides jurassiques des environs de Mâcon. Bull. Soc. hist. nat. Macon, ii, pp. 159-184, pl. ii. (Aug.) [II, B, ii, e. III, B, iii, c, 1, 2, 3; d.]
A continuation of LISSAJOUS (189), Zool. Rec. 1903.
Review: by J. LAMBERT, Rev. paleozool. ix, pp. 43-45 (Jan. 1905).
154. LO BIANCO, S. Pelagische Tiefseefischerei der "Maja" in der Umgebung von Capri. (Beiträge zur Kenntnis des Meeres und seiner Bewohner, Bd. I.) 8vo, viii + 92 pp., xlii pls., 1 map. Jena: Fischer, M.20. [III, A, ii.]
- LOEB, J. (170) Zool. Rec. 1902. Abstract: by R. S. BERGH, Zool. Centrbl. ix, p. 753 (16 Dec. 1902).—(172) Zool. Rec. 1902. Abstracts: by R. FICK, Zool. Centrbl. x, p. 379 (5 May, 1903); by MARYA KRAHELSKA, Kosmos polski, xxix, pp. 110-116 (Apr. 1904).—(192) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centrbl. x, p. 885 (15 Dec. 1903).—(194) Zool. Rec. 1903. Abstract by R. FICK, Zool. Centrbl. xi, pp. 784-785 (6 Dec. 1904).

155. [LOEB, J.] Further experiments on the fertilization of the egg of the sea-urchin with sperm of various species of starfish and a holothurian. Publ. Univ. California, Physiol. i, pp. 83-85. (10 Feb.) [II, F, viii.]
Abstracts : by R. FICK, Zool. Centrbl. xi, p. 785 (6 Dec. 1904); in LUDWIG (166).
156. —. Ueber Befruchtung, künstliche Parthenogenese und Cytolyse des Seeigels. Arch. ges. Physiol. ciii, pp. 257-265. (23 June.)
Abstract in LUDWIG (166). [II, F, viii.]
157. —. Ueber die Natur der Loesungen, in welchen sich die Seeigeleier zu entwickeln vermögen. T. c. pp. 503-509. (9 July.) [II, F, viii.]
Abstract in LUDWIG (166).
158. —. Weitere Versuche ueber heterogene Hybridisation bei Echinodermen. Arch. ges. Physiol. civ, pp. 325-350, 2 text-figs. (9 Sept.)
Abstract in LUDWIG (166). [II, F, viii.]
159. —. Further experiments on heterogeneous hybridization in Echinoderms. Publ. Univ. California, Physiol. ii, pp. 5-30. (9 Dec.) [II, F, viii.]
A translation by J. B. MACCALLUM of LOEB (158).
— See also ABRIC, P. (1).
160. LOISEL, G. Revue annuelle d'Embryologie. 2^{me} partie : Recherches sur l'oeuf, technique embryologique. Rev. gen. Sci. xv, pp. 144-153. (15 Feb.) [II, F, viii.]
ŁOMNICKI, J. (174) Zool. Rec. 1902. Abstract by L. SZAJNOCHA, Geol. Centrbl. iv, p. 405 (15 Dec. 1903).
161. LOOMIS, F. B. The dwarf fauna of the pyrite layer at the horizon of the Tully limestone in Western New York. Bull. N. York State Mus. lxi, pp. 892-920 and 1240-1248, pls. i-v. (Nov. 1903.) [III, B, iv, f.]
162. LORIOL, P. DE. Notes pour servir à l'étude des Echinodermes. (2e. sér.), Fascicule II, 4to, 68 pp., iv pls. (= pp. 51-116, pls. iv-vii of series). Bâle & Geneve : Georg & Co. (Feb.) [II, B, ii, c : F, vii, c. III, A, ii : B, ii, c, d ; iii, b, I, 2. IV, c, d, E, F.]
Abstract : by J. LAMBERT in Rev. paleozool. viii, pp. 127, 128 (April, 1904).
- LORY, P. (202) Zool. Rec. 1903. Also published Ann. Univ. Grenoble, xiii, pp. 603-615, ii pls. (1901 ?)
163. —. Sur le faciès à Entroques dans le Lias des Alpes suisses et françaises. C.R. Soc. Helvet. 1902, p. 94, reprinted in Arch. Sci. Nat. (4), xiv, p. 468 (15 Nov. 1902), also Eclog. geol. Helvet. vii, p. 334 (Jan. 1903). [II, D, x.]
— & SAYN, G. (197) Zool. Rec. 1897. Also reprinted in Ann. Univ. Grenoble, viii, pp. 139-166, i pl. (1896).
164. LUDWIG, H. Brutpflege bei Echinodermen. Zool. Jahrb. Suppl. vii (Weismann Festschr.), pp. 683-699. [II, B, iii, c : E, iv. III, A, i.]
165. —. Notiz ueber Brutpflege bei Echinodermen. Zool. Anz. xxvii, p. 423. (22 March.) [II, B, iii, c.]
Abstract in J. R. Micr. Soc. 1904, p. 420 (Aug.).
166. —. Echinoderma. Zool. Jahresber. for 1904. (Aug. 1905.) [II, E, iii.]
Gives Literature for 1904, and Abstracts of: AGASSIZ (3), ANDERSSON (10), DELAGE (52, 53), DE MEIJERE (57), FUEHNER (90), GARBOWSKI (93, 94), GIARD (100), HERBST (117, 119), HEROUARD (121), JANSSENS (136), KELLOGG (139), KOEHLER (143), LOEB (155-159), LYON (169, 171), MACBRIDE (172), MEISSNER (186), MORTENSEN (195), ØSTERGREN (202, 204), PETRUNKEWITSCH

- (217), POLARA (220), SCHMIDT (246), SMIROTH (256), SPAULDING (263), ZIEGLER (298).
- [LUDWIG, H.] See also :—ACKERMANN, A., ARIOLA, V., BARTHELS, P., BELL, F. J., DE MEIJERE, J. C. H., ENRIQUES, P., FUEHNER, H., FUERTH, O. VON, GRAVE, C., GRIEG, J. A., HÉROUARD, E., KOEHLER, R., ÖSTERGREN, H., PERRIER, R., RANKIN, W. M., RUSSO, A., THEEL, H.
167. *LUKAS, F. Psychologie der niedersten Thiere. Eine Untersuchung über die ersten Spuren psychischen Lebens im Thierreiche. 276 pp., 34 text-figg. Wien & Leipzig. [II, c, vi.]
Abstract by P. MAYER, Zool. Jahresber. 1904 (Aug. 1905).
168. LUPI, A. Fauna miocenica presso Tagliacozzo. Boll. Soc. geol. Ital. xxiii, pp. xxviii-xxix. (10 May.) [III, B, ii, d.]
LUTHER, D. D. See CLARKE, J. M. (40).
169. LYON, E. P. Rhythms of CO₂ production during cleavage. Science (n. s.), xix, pp. 350-353. (26 Feb.) [II, F, iv, c.]
Abstract in LUDWIG (166).
170. —. A Biological Examination of Distilled Water. Biol. Bull vi, pp. 198-202. (March.) [II, E, i, b.]
171. —. Rhythms of susceptibility and of carbon dioxide production in cleavage. Amer. J. Physiol. xi, pp. 52-58. (1 April.) [II, F, viii.]
Abstract in LUDWIG (166).
- MAAS, O. See BOVERI, T. (31), DRIESCH, H.
172. MACBRIDE, E. W. The early stages in the development of *Ophiothrix fragilis*. Amer. Natural. xxxviii, pp. 508-511, 5 text-figg. (Aug.) [II, F, iv.]
Abstract in LUDWIG (166).
- MACCALLUM, J. B. See LOEB, J. (159).
173. M'CLURE, W. F. Starfish and their injuries. Scient. Amer. xc, p. 98, text-figg. (30 Jan.) [II, D, vii, d.]
174. McINTOSH, D. C. On the Echinodermata of the Firth of Clyde and variation in *Ophiocoma nigra*. Rep. Brit. Ass. 1903, pp. 696-697. (Aug.) [III, A, ii.]
An Abstract, mainly of McINTOSH (212) Zool. Rec. 1903.
175. MADER, C. Recherches sur les propriétés hypnotiques des couleurs d'aniline en général et du bleu de méthylène en particulier. Bull. Soc. zool. France, xxviii, pp. 204-210. (1903.) [II, E, i, a.]
176. MADSEN, V. On Jurassic fossils from East Greenland. Medd. Gronland, xxix, pp. 157-210, pls. vi-x, 1 map. Translated by ETHEL G. SKEAT. [III, B, iii, c, 3.]
177. —. Nils Olof Holst: Kvartär-studier i Danmark och norra Tyskland. Geol. Foren. Stockholm Forh. xxvi, pp. 433-452. En kritisk Anmeldelse. Geol. Foren. Stockholm Forh. xxvi, pp. 529-534. [II, B, ii, b.]
Criticism of HOLST's paper.
178. MAIRE, V. Coupe du Rauracien inférieur prise au Prélôt dans la tranchée de la route de Champlitte à Talmay. Bull. Soc. Grayloise d'Émul. vii, pp. 161-167. [II, D, x. III, B, iii, c, 2.]
179. MALARD, A. E. Des variations mensuelles de la faune et de la flore maritimes de la baie de la Hougue (janvier et février). Bull. Mus. Paris, 1902, pp. 190-197. (1902.) [II, F, iv, e. III, A, ii.]
180. —. Sur un Lamellibranche nouveau, parasite des Synaptes. Bull. Mus. Paris, 1903, pp. 342-346. (1903, ? 1904.) [II, D, viii, b.]

181. MALLADA, L. Explicacion del mapa geológico de España. Tomo v. Sistemas infracretáceo y cretáceo. Mem. Com. geol. Espana, 520 pp. [III, B, iii, b.]
182. MANDOUL, H. Recherches sur les colorations tégumentaires. Ann. Sci. nat. (8), xviii, pp. 225-468. (Oct. 1903.) [III, c, v.]
183. MARIANI, E. Appunti geologici sul secondario della Lombardia occidentale. Atti Mus. Milano, xliii, pp. 113-157. [III, B, iii, d.]
184. MARINE BIOLOGICAL ASSOCIATION, U. K. Plymouth Marine Invertebrate fauna. Being notes of the local distribution of species occurring in the neighbourhood, compiled from the Records of the Laboratory. J. Mar. Biol. Ass. (n.s.), vii, pp. 155-298, i chart. (Dec.) [II, D, iii, a; viii, c. III, A, ii.]
Echinoderma, pp. 206-211.
185. †MARTENS, E. v. Die Mollusken (Conchylien) und die uebrigen Wirbellosen Thiere in Rumpf's Rariteitskammer. Rumphius Gedenkböck, Kolon. Mus. Haarlem, pp. 109-136. (1902.) [II, E, iii. III, A, iii.]
MAYER, P. See LUKAS, F. (167).
MEISENHEIMER, J. See FUCHS, T., ROEMER, F. (229).
186. MEISSNER, M. Asteroideen. Ergeb. Hamburger Magalhaensische Sammelreise, Lief vii, No. 1, 8vo, 28 pp., i pl. Hamburg: Friederichsen. Abstract in LUDWIG (166). [II, B, iii, c. III, A, vi.]
——. See also HAMANN, O. (112).
187. MELI, R. Escursione geologica sul littorale di Nettuno. Boll. Soc. geol. Ital. xxiii, pp. xxxvi-xli. [III, B, ii, b.]
——. See also DE VESCOVI, P. (61).
188. MENGEL, O. Observations géologiques sur la partie sud-est des Corbières (région de Maury et Estagel). Bull. Soc. geol. France (4), iv, pp. 256-281. (Oct. [recd. in London, June, 1905].) [III, B, iii, d.]
189. MEUNIER, S. Sur des concrétions quartzéuses renfermées dans la craie blanche de Margny (Oise). Bull. Soc. geol. France (4), iv, pp. 218-222. (Aug.) [II, D, x.]
190. MEYER, E. Theoretische Betrachtungen ueber die ersten Anfänge des ambulacralen Wassergefässsystems der Echinodermen und die Abstammung ihrer bilateralen Vorfahren. Zool. Jahrb. Anat. xxi, Heft 2, 40 pp., 5 text-figg. [II, A, ii.]
Abstracts: by Author, C.R. Congr. Zool. vi, p. 367 (1905); J. R. Micr. Soc. 1905, p. 443 (Aug.).
——. See also SCHLUETER, C.
191. †MICHAILOVSKIJ, M. Zoologische Ergebnisse der Russischen Expeditionen nach Spitzbergen. Echinodermen. Nachtrag. Annuaire Mus. St. Petersb. viii, pp. 392-394. (Mar.) [III, A, v.]
192. —. Die Echinodermen der zoologischen Ausbeute des Eisbrechers "Jermaks" von Sommer 1901. Annuaire Mus. St. Petersb. ix, pp. 157-188. [II, B, ii, e: D, iii, a: F, vii, b, d, e. III, A, v. IV, B-F.]
MONACO, PRINCE OF. See ALBERT HONORÉ (4).
193. MONKS, SARAH P. Variability and autotomy of *Phataria*. P. Ac. Philad. lvi, pp. 596-600, pl. xlii. (Oct.) [II, B, ii, b: D, vii, d.]
Abstract in J. R. Micr. Soc. 1905, p. 442 (Aug.).
MORGAN, T. H. (226) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centribl. x, p. 887 (15 Dec. 1903).
MORTENSEN, T. (227) Zool. Rec. 1903. The date (Jan.) refers to author's separate. The volume was published in 1904 (? Dec.).

194. [MORTENSEN, T.] On some Echinothurids from Japan and the Indian Ocean. *Ann. Nat. Hist.* (7), xiv, pp. 81-93, pls. ii-v. (Aug.)
[II, B, i, c, 5. III, A, iii, iv. IV, c.]
195. —. The Danish expedition to Siam 1899-1900. II. Echinoidea (1). *Danske Selsk. Skr.* (7), i, No. 1, 124 pp., vii pls., 1 map. (Sept.)
[II, B, i, c, 5; d, 5; ii, c, e: D, viii, c: F, vii, c. III, A, iii, iv. IV, c.]
Abstracts: *J. R. Micr. Soc.* 1905, p. 189 (April); LUDWIG (166).
— See also DELAGE, Y. (54), PETERSEN, C. G. J. (215).
196. NEWTON, R. B. *Linthia oblonga* (Orbigny) from Sinai. *Geol. Mag.* (n. s.), dec. v, vol. i, pp. 441-445, pl. xv. (Sept.)
[II, B, i, c, 2. III, B, iii, b, 1. IV, c.]
Abstract: by J. LAMBERT, *Rev. paleozool.* ix, p. 48 (Jan. 1905).
— See also BATHER, F. A. (18).
197. NIBELLE, M. Compte Rendu de l'excursion à Montivilliers et à Saint-Jouin le Dimanche 14 Juin 1903. *Bull. Soc. Rouen* (4), xxxix, pp. 175-179.
[III, B, iii, b, 1.]
Fossils by R. FORTIN.
198. NOBRE, A. Subsídios para o estudo da fauna marinha do norte de Portugal. *Ann. Sci. nat. Porto*, viii, pp. 37-94. (1903.) [III, A, ii.]
199. —. Subsídios para o estudo da fauna marinha do sul de Portugal. T. c. pp. 153-160. (1903.) [III, A, ii.]
200. NORDMANN, V. En klump sammenkittede Molluskskaller fra havbunden ved Laeso. [A cemented mass of mollusc shells from the sea-floor at Laeso.] *Medd. Dansk. Geol. For.* ix, pp. 37-44, 2 text-figg. (1903.) [II, D, x.]
- OPPENHEIM, P. (210) *Zool. Rec.* 1902. Abstract: by A. TORNGUIST, *N. Jahrb. Min.* 1905, ii, pp. 149-151 (15 July, 1905).
201. —. Ueber Tertiärfossilien, wahrscheinlich eozänen Alters, von Kamerun. In E. ESCH, *Geol. v. Kamerun*, pp. 243-285, pls. vi-ix. 8vo, Stuttgart.
[III, B, ii, f.]
- ÖSTERGREN, H. (244) *Zool. Rec.* 1903. Abstract by H. LUDWIG, *Zool. Centrbl.* x, p. 150 (10 March, 1903).
202. —. ...“ueber die arktischen Seesterne”... [read before] *Naturvetenskapliga Studentsällskapet*, Upsala. *Zool. Anz.* xxvii, pp. 614-616. (3 June.)
[III, A, v. IV, D.]
Abstract in LUDWIG (166).
203. —. ...“eine neue *Psolus*-Art, *Ps. valvatus*”... [read before] *Naturvetenskapliga Studentsällskapet*, Upsala. *Zool. Anz.* xxvii, pp. 659-662. (14 June.)
[III, A, ii. IV, B.]
204. —. Ueber die Funktion der Füßchen bei den Schlangensterne. *Biol. Centrbl.* xxiv, pp. 559-565, 2 text-figg. (1 Sept.)
[II, c, vi, vii: D, iv, e; vi.]
Abstracts: *J. R. Micr. Soc.* 1904, p. 656 (Dec. 1904); LUDWIG (166).
205. PACE, S. Note on two species of *Cucumaria* from Plymouth, hitherto confused as *C. montagui* (Fleming): *C. normani*, n. sp., and *C. saxicola*, Brady and Robertson. *J. Mar. Biol. Ass. (n. s.)*, vii, pp. 305-309. (Dec.)
[III, A, ii. IV, B.]
Abstract: in *J. R. Micr. Soc.* 1905, p. 189 (April).
- PÁLFY, M. v. See TOULA, F. (269).
206. PARKINSON, [J.] H. Ueber eine neue Culmfauna von Königsberg unweit Giessen und ihre Bedeutung für die Gliederung des rheinischen Culm. *Zeitschr. Deutsch. geol. Ges.* lv, pp. 331-374, pls. xv, xvi. (Feb.)
[III, B, iv, e. IV, c.]
Abstract: by the author, *Geol. Mag.* (n. s.), dec. v, vol. i, pp. 272-276 (June, 1904).

207. PARONA, C. La pesca marittima in Liguria. Atti Soc. Ligustica, ix, pp. 327-393; also in Boll. Mus. Genova, lxvi, 69 pp., & Giorn. ital. Pesca Agric. ii, pp. 261-271, 295-304, 336-341, 360-366. (1898.)
[II, D, ix.]
208. PATRINI, P. Rinvenimento di fossili pliocenici nell' escavazione della galleria di Gattico presso Borgamanero. Rend. Ist. Lombardo (2), xxxvi, pp. 738-750. (1903.)
[III, B, ii, c.]
- PAVLOW, A. W. See BERG, L. (24).
- PELLAT, E. (252) Zool. Rec. 1903. Abstract: by A. TORNQUIST, N. Jahrb. Min. 1905, ii, p. -149- (15 July, 1905).
209. PEACH, B. N. & HORNE, J. The Canonbie Coalfield: its geological structure and relations to the Carboniferous rocks of the north of England and central Scotland. Tr. R. Soc. Edinb. xl, pp. 835-877, pls. i-iv. (1903 [i.e. Feb. 1904].)
[III, B, iv, e.]
- PERNER, [J.]. See FRIČ, A. (88).
210. PERON [P. A.]. "Noto faisant connaitre les conditions...du gisement des radioles décrits [par A. VALETTE]." Bull. Soc. geol. France (4), i, pp. 10-11. (June, 1901.)
Same as PERON (238), Zool. Rec. 1901.
— See also COLLET, P. (44).
211. PERRIER, [J. O.] E. & GRAVIER, C. La tachygénèse ou accélération embryogénique, son importance dans les modifications des phénomènes embryogéniques; son rôle dans la transformation des organismes. Ann. Sci. nat. (8), xvi, pp. 133-374, 119 text-figg. (Feb. 1903.)
[II, A, ii.]
Abstract: by P. MAYER, Zool. Jahresber. 1903 (Aug. 1904).
- PERRIER, R. (254) Zool. Rec. 1903. Review by H. LUDWIG, Zool. Centrbl. x, pp. 150-152 (10 March, 1903).
212. —. Holothuries du cap Horn. Bull. Mus. Paris, 1904, pp. 13-17 [not 16 as in author's copy]. (Mar.)
[III, A, vi. IV, B.]
213. —. Nouvelle contribution à l'étude des Holothuries de la Nouvelle-Zélande. Bull. Mus. Paris, 1904, pp. 367-370, 1 text-figg. (Dec.)
[III, A, iv. IV, B.]
214. —. Sur une nouvelle espèce de Chiridota. Bull. Mus. Paris, 1904, pp. 370-371, 1 text-figg. (Dec.)
[III, A, vi. IV, B.]
- PERVINQUIÈRE, L. See VALETTE, A.
215. PETERSEN, C. G. J. & WINGE, H. Affaldsdynger fra Stenalderen i Danmark undersøgte for Nationalmuseet. VII. Bløddyr-Skaller. [Stone Age, Denmark...Mollusc-shells.] (1903.)
[III, B, ii, b.]
216. PETRASCHECK, W. Ueber die jüngsten Schichten der Kreide Sachsens. Abh. Ges. Isis, 1904, pp. 3-10.
[III, B, iii, b.]
217. PETRUNKEWITSCH, A. Künstliche Parthenogenese. Zool. Jahrb. Anat. Suppl. Bd. vi, pp. 77-138, pls. viii-x, 8 text-figg.
[II, F, viii.]
Abstract: for technique, by E. SCHOEDEL, Zeitschr. wiss. Mikr. xx, pp. 440-441 (1904); in LUDWIG (166).
— See WILSON, E. B. (288).
218. PIERI, J. B. L'ovulase et le développement des oeufs vierges. Rev. gen. Sci. xv, pp. 630-631. (15 July.)
[II, F, viii.]
219. PLATE, L. Beiträge zur Technik des Sammelns, der Konservierung und der Aufstellung biologischer Gruppen mariner Tiere. Verh. Deutsch. zool. Ges. 1903, pp. 143-158. (1903.)
[II, E, i, a.]
- POLARA, G. (260) Zool. Rec. 1903. Abstract: by author, Monit. Zool. ital. xiv, pp. 336-338 (Dec. 1903).

220. [POLARA, G.] Sopra una nuova gonade delle Oloturie. Zool. Anz. xxviii, pp. 33-37, 4 text-figg. (13 Sept.) [II, B, i, b, 12.]
Abstracts : in J. R. Micr. Soc. 1904, p. 656 (Dec.) ; LUDWIG (166).
POLKINGHORNE, B. C. See WRIGHT, W. (294).
221. RABELLE, —. Note sur la carrière de Craie phosphatée de Séru-Ribemont. Ann. Soc. geol. Nord. xxxii, pp. 128-130. (1903.) [III, B, iii, b, 1.]
222. RADKEVICH, GH. A. (RADKEWITSCH, G.). O faunye myelov'ikh peskov i peschanikov Podol'skoï ghubernii. (Sur la faune des sables et des grés crétacées du gouvernement de Podoli). Zapiski Kiev. Obshch. xvi, pp. xxviii-xxxvii. (1900.) [III, B, iii, b, 1.]
- RADWAŃSKA, M. See DUNGERN, E. VON.
- RANKIN, W. M. (252) Zool. Rec. 1901. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 74 (10 Feb. 1903).
223. RAVN, J. P. J. Bemaerkninger om lagserien i Stevns klint samt om *Cyathidium Holopus* Steenstr. Geol. Foren. Stockholm Forh. xxvi, pp. 347-354. [II, D, iii, f.]
224. REBOUL, P. Catalogue des types paléontologiques contenus dans les collections de Grenoble. Trav. Lab. geol. Grenoble, vii, pp. 127-149. [II, B, i, c.]
- REGNY, V. DE. See VINASSA DE REGNY, P. [E.].
225. REID, C. The marine Tertiary fauna of America and Europe. [A review of DALL, W. H. Contrib....Tertiary fauna of Florida.] Geol. Mag. (n.s.), dec. v, vol. i, pp. 136-138. (March.) [III, B, i.]
226. RETZIUS, G. Zur Kenntnis der Spermien der Evertebraten. Biol. Untersuch. (n.s.), xi, pp. 1-32, xii pls. [II, F, iii.]
227. RICHARDSON, G. B. Report of a reconnaissance in Trans-pecos Texas. Univ. Texas Min. Surv. Bull. ix. = Bull. Univ. Texas, xxiii, 120 pp., xi pls. (Nov.) [III, B, iii, b, 2 ; iv, e.]
228. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. Ann. Univ. Lyon. (n. s.), Fasc. xiv, pp. 1-252, pls. i-viii. [II, D, x. III, B, iii, c, 2.]
- RICHTMAN, W. O. See TRUE, R. H. (270).
229. ROEMER, F. Die Meeresfauna von Spitzbergen und ihre Beziehungen zu den Meeresstroemungen. Ber. Senckenberg. Ges. 1902, pp. 139-143. (1902.) [III, A, v.]
Abstract by J. MEISENHEIMER, Zool. Centrbl. x, p. 923 (29 Dec. 1903).
- ROGERS, A. F. See BEEDE, J. W. (21).
230. ROLLIER, L. Beweis, dass die Nattheim-Wettinger-Schichten (weiss Jura E = Ober-Kimeridge) auch auf der Basler Tafellandschaft, etc., ursprünglich vorhanden waren. Vierteljahrschr. Ges. Zurich, xlviii, pp. 458-472, 3 text-figg. [III, B, iii, c, 1.]
231. — & TRIBOLET, M. DE. Sur la découverte de l'Oxfordien pyriteux dans le canton de Neuchâtel. Bull. Soc. Neuchâtel, xxvii, pp. 31-38, i fig. (1899.)
Essentially the same as (284) Zool. Rec. 1900.
232. ROUSSEL, J. Contribution à l'étude géologique des Pyrénées. Bull. Carte geol. France, xi, pp. 233-257, 10 text-figg. (1900.) [III, B, iii, b, 1.]
233. —. I. Le Primaire de Betchat et de Cabanères. La granulite et l'ophite de Betchat et de Salies-du-Salat. II. Le pli du Raz Mouchet. III. Transgressivité et denudation, les klippen des

- Pyrénées, l'âge des couches à Caprines et à Orbitolines de la bande crétacée de Gabachou-Padern. Bull. Carte geol. France, xii, pp. 305-349, 2 maps, 7 text-figg. (1902.) [III, B, iii, b, 1. IV, g.]
234. [ROUSSEL, J.] Tableau stratigraphique des Pyrénées. Bull. Carte geol. France, xv, pp. 1-120, pls. i-iii. (Feb. 1904.) [III, B, i.]
235. ROWE, A. W. The zones of the White Chalk of the English coast. IV.—Yorkshire. The maps and cliff sections by C. D. SHERBORN. The White Chalk of the Yorkshire coast from Speeton to Bridlington. P. Geol. Ass. xviii, pp. 193-296, pls. xvii-xl. (19 Feb.) Index by C. D. SHERBORN, t. c. pp. 375-384. (10 June.) [III, B, iii, b, 1.]
236. ROWLEY, R. R. The Echinodermata of the Missouri Silurian and a new brachiopod. Amer. Geol. xxxiv, pp. 269-282, pl. xvi. (Nov.) [III, B, iv, g. IV, F, g, H.]
- See GREENE, G. K. (103-105).
237. ROYAL COLLEGE OF SURGEONS. Descriptive and illustrated Catalogue of the physiological series of comparative anatomy contained in the museum of the Royal College of Surgeons of England. The Echinodermata by R. H. BURNE. Second edition. Vol. ii, x+518 pp. London: Taylor & Francis. (1902.) [II, B, i, a, 9.]
- RUEDEMANN, R. See KLEM, MARY J. (142), SPENCER, W. K. (264), WOOD, E. (291).
- RUSSO, A. (269) Zool. Rec. 1901 & (245) Zool. Rec. 1902. Abstracts by H. LUDWIG, Zool. Centrbl. x, pp. 74-77 (10 Feb. 1903).
238. RZEHA, A. Das Liasvorkommen von Freistadt in Mähren. Zeitschr. mähr. Landesmus., iv, pp. 89-152, pl. i, 10 text-figg. [III, B, iii, d. IV, F.]
239. —. Neue Fossilien aus dem Lias von Freistadt in Mähren. Verh. geol. Reichsanst. 1904, pp. 132-133. (Mar.) [III, B, iii, d.]
240. SALTER, MARY. The fossils of Torquay and its neighbourhood, and where to find them. 28 pp. (2 of them as plates), 18 x 12 cm. London: Headley Bros., 1s. 6d. [Dated 1903, publ. Feb. 1904.] [III, B, iii, b, 1.]
- SAVIN, L. (247) Zool. Rec. 1902. Abstract by W. KILIAN, Geol. Centrbl. iii, p. 736 (July, 1903).
241. SAVORNIN, J. Structure du Djebel Maâdid et du Talemtaga. Bull. Soc. geol. France (4), iv, pp. 137-155, pl. vii. (Aug.) [III, B, ii, d ; iii, b, 1.]
- SAYN, G. See LORY, P.
242. SCHAEFER, H. F. Beiträge zur Kenntnis der Rhät- und Lias-Ablagerungen des Grossen Seebergs bei Gotha. Naturw. u. Geschichtliches vom Seeberg. pp. 19-35. Gotha: Thienemann. (1901.) [III, B, iii, d.]
243. SCHARDT, H. Mélanges géologiques sur le Jura neuchâtelois et les régions limitrophes. Quatrième fascicule. Bull. Soc. Neuchatel, xxxi, pp. 253-324, pls. i-iii, 11 text-figg. (1903 [? = 1904; recd. April, 1905].) [II, D, x ; III, B, iii, c, 2, 3.]
244. — & DUBOIS, A. Le Crétacique moyen du synclinal de Val-de-Travers-Rochefort. Bull. Soc. Neuchatel, xxviii, pp. 129-157, 7 text-figg. (1901.) [III, B, iii, b, 1 & 2.]
- SCHLUETER, C. (252) Zool. Rec. 1902. Abstract by E. MEYER, Geol. Centrbl. iv, p. 536 (Oct. 1904).

245. [SCHLUETER, C.] Zu *Caratomus*. Zeitschr. Deutsch. geol. Ges. lv, Briefl. Mitt. p. 8. (1903 [i.e. 1904].) [iv, c]
246. SCHMIDT, H. Zur Kenntnis der Larvenentwicklung von *Echinus microtuberculatus*. Verh. Ges. Würzburg (n. s.), xxxvi, pp. 297-336, pls. iv-viii, 4 text-figg. [II, E, i, b : F, iv, c.]
Abstracts : J. R. Micr. Soc. 1904, p. 534 (Oct.); LUDWIG (166).
- SCHOEBEL, E. See PETRUNKEWITSCH, A. (217).
247. [SCHUCHERT, C.] Paleontological collections from Europe. Smithson. Collect. xlv, pp. 448-450, pls. ci, cii. (15 Jun.) [II, E, i, c.]
248. —. A noteworthy crinoid. T. c. p. 450, pl. ciii. (15 June.) [II, E, i, c.]
249. —. On Siluric and Devonian Cystidea and *Camarocrinus*. Smithson. Collect. xlvii, pp. 201-272, pls. xxxiv-xliv, 24 text-figg. (4 Nov.) [II, B, i, f, 5 ; ii, e : E, iv : F, vii, g. III, B, iv, f, g. IV, F, g.]
Contains description of *Echinoencrinites fenestratus* by G. TROOST.
Abstract : by J. LAMBERT, Rev. paleozool. ix, p. 92 (April, 1905).
- SCHUECKING, A. (290) & (291) Zool. Rec. 1903. Abstracts by R. FICK, Zool. Centrbl. xi, pp. 161-162, 163 (19 April, 1904).
250. —. Zur Physiologie der Befruchtung. Centrbl. Physiol. xvii, pp. 625-628. [II, F, iv.]
251. SCHUETZE, E. Die Fauna der schwäbischen Meeresmolasse. I. Teil : Spongien und Echinodermen. Jahresh. Ver. Württemb. 1904, pp. 147-188, pls. ii-v. (June.) Also issued as Mt. Nat. Kab. Stuttgart No. 26, with same pagination (Mar.). [III, B, ii, d. IV, c, D, F.]
Review : by J. LAMBERT, Rev. paleozool. viii, pp. 192, 193 (July, 1904). Abstract by Author, Geol. Centrbl. iv, p. 627 (Nov. 1904).
- SEGUIN, [C.] (277) Zool. Rec. 1901 & (257) Zool. Rec. 1902. Abstracts : by A. TORNUST, N. Jahrb. Min. 1905, ii, p. -148- (15 July, 1905). (292) Zool. Rec. 1903. Review : by J. LAMBERT, Rev. paleozool. ix, p. 45 (Jan. 1905).
252. SEMON, R. Einige neue Ambonesische Raritäten. Rumphius Gedenkboek Kolon. Mus. Haarlem, pp. 94-97, 1 text-fig. (1902.) [III, A, iii.]
- SEURAT, L. See COUTÈRE, H. (48).
- SHERBORN, C. D. See ROWE, A. (235).
253. SHIPLEY, A. E. On the ento-parasites collected by the Skeat-Expedition to Lower Siam and the Malay peninsula in the years 1899-1900. P. Zool. Soc. London, 1903, vol. ii, pp. 145-156, pl. xvi. (Oct. 1903.) [II, D, viii, b.]
254. SHORT, A. R. A description of some Rhaetic sections in the Bristol district, with considerations on the mode of deposition of the Rhaetic series. Quart. J. Geol. Soc. lx, pp. 170-193. (14 May.) [III, B, iii, d.]
- SIEDLICKI, M. See CAULLERY, M.
255. SIEMIRADZKI, J. Fauna kopalna warstw Oxfordzkich i Kimerydzkich w Polsce. Część II [Fossil fauna of the Oxfordian & Kimmeridgian beds in Poland, Section II.] Ślimaki, Małże, Ramionoplawy i Szkarłupnie. Pam. Ak. Krakow, xviii, pp. 93-142. (1892.) [III, B, iii, c, I.]
256. SIMROTH, H. Ueber den Ursprung der Echinodermen. Verh. Deutsch. zool. Ges. xiv, pp. 77-103, 15 text-figg. [II, A, ii.]
Abstract in LUDWIG (166).
- SKEAT, ETHEL G. See MADSEN, V. (176).

257. SMITH, J. List of shells etc. observed on the Ardeer and Irvine Beaches, Ayrshire. Tr. Soc. Glasgow (n. s.), iii, pp. 243-248. (1892.) [III, A, ii.]
258. SOLGER, F. Die Fossilien der Mungokreide in Kamerun und ihre geologische Bedeutung, mit besonderer Berücksichtigung der Ammoniten, in E. ESCH, Beitr. z. Geol. v. Kamerun, pp. 83-242, pls. iii-v, 75 text-figg. 8vo, Stuttgart. (Nov.) [III, B, iii, b, I.]
259. SOLLMANN, T. The simultaneous action of pilocarpine and atropine on the developing embryos of the sea-urchin and starfish.—A contribution to the study of the antagonistic action of poisons. Amer. J. Physiol. x, pp. 352-361. (1 Feb.) [II, F, viii.]
260. —. Structural changes of ova in anisotonic solutions and saponin. Amer. J. Physiol. xii, pp. 99-115. (1 Sept.) [II, F, viii.]
261. SOVĬNSKĬĬ, V. (SOWINSKY, W.). Vvedenie v izuchenie faunui Ponto-Kaspijsko-Aral'skagho morskogho basseina, razsmatruvaemoi s točki zryeniya samostoyatel'noi zoogeografičeskoi provintzii. (Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante.) Zapiski Kiev. Obshch. xviii, Mém. pp. i-xiii, 1-487, 1-216, pls. i-iv. [III, A, ii.]
262. SPAULDING, E. G. The special physics of segmentation as shown by the synthesis, from the standpoint of universally valid dynamic principles, of all the artificial parthenogenetic methods. Biol. Bull. vi, pp. 97-122. (Feb.) [II, F, viii.]
263. —. The rhythm of immunity and susceptibility of fertilized sea-urchin eggs to ether, to HCl, and to some salts. Biol. Bull. vi, pp. 224-240, 2 text-figg. (April.) [II, F, viii.]
Abstract in LUDWIG (166).
264. SPENCER, W. K. On the structure and affinities of *Palaeodiscus* and *Agelacrinus*. P. R. Soc. London, lxxiv, pp. 31-46, pl. i, 12 text-figg. (19 July.) (II, A, iii: B, i, c, 5; g, 5.)
Prelim. Abstract: in Nature, lxx, p. 261 (14 July, 1904).
Abstracts: in J. R. Micr. Soc. 1904, p. 656 (Dec.); by R. RUEDEMANN, Geol. Centrbl. vi, p. 312 (15 Mar. 1905).
265. SPERRY, W. L. Notes on *Metacrinus*. Rep. Michigan Ac. Sci. 1904, pp. 195-199. [II, B, i, f, 12; ii, d, 2. IV, F.]
- SPRINGER, F. (297) Zool. Rec. 1903. The details quoted were taken from a definite statement on the title-page of the author's reprint. It now appears that this statement was a printer's error and that the pages are 219-223, while the date of publication was November 1904.
- STEINBRUECK, H. (267) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. ix, p. 774 (16 Dec. 1902).
- STEVENS, NETTIE M. (270) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. x, p. 416 (19 June, 1903).
266. STRANGWAYS, C. F. The Geology of the Oolitic and Cretaceous rocks south of Scarborough. Mem. geol. Surv. England and Wales (Explan. Sheets 54 & 55 new ser.; 95 S.W. and 95 S.E. old. ser.), viii+120 pp., xi pls., text-figg. [III, B, iii, b, c.]
- SZAJNOCHA, L. See ŁOMNICKI, J.
- TEICHMANN, E. (303) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centrbl. x, pp. 888-892 (15 Dec. 1903).
- THEEL, H. (277) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. ix, p. 838 (30 Dec. 1902).

267. TÖRNEBOHM, A. E. & HENNIG, A. Beskrifning till Blad 1 & 2 omfattande de topografiska kartbladen Landskrona, Lund, Kristianstad, Malmö, Ystad, Simrishamn. Sveriges geol. Unders. (Ser. A1, a), 198 pp., iii pls., 1 map. [III, B, iii, b, 1.]
- TOKUNAGA, S. See YOSHIWARA, S. (295).
268. TORNQUIST, A. Die Beschaffenheit des Apikalfeldes von *Schizaster* und seine geologische Bedeutung. Zeitschr. Deutsch. geol. Ges. lv, pp. 375-392, pl. xva. (1903 [i.e. Feb. 1904].) [II, A, iii: B, i, c, 5; ii, e. III, B, ii, a. IV, c.]
 Review: by J. LAMBERT, Rev. paleozool. ix, p. 97 (April, 1905).
 Abstract: by Author, Geol. Centrbl. vi, p. 428 (15 April, 1905).
 —. See also FRAIPONT, J. (85), LAMBERT, J. (148), OPPENHEIM, P., PELLAT, E., SEGUIN [C].
269. TOULA, F. Die sogenannten Grauwacken- oder Liaskalke von Theben-Neudorf (Dévény-Ujfalú). Verh. Ver. Presburg, xxii, pp. 23-30. (1902.) [III, B, iii, e.]
 Abstracts by M. v. PÁLFY, Foldtani Kozl. xxxii, p. 417 (Jan. 1903) & Geol. Centrbl. iv, p. 222 (15 Oct. 1903).
- TRIBOLET, M. DE. See ROLLIER, L. (231).
- †TROOST, G. See SCHUCHERT, C. (249).
270. TRUE, R. H. & RICHTMAN, W. O. Artificial sea-waters as tested in aquaria. In Report of work at Woods Hole Laboratory. Science (n. s.), xix, pp. 252-253. (12 Feb.) [II, c, vii.]
271. *TULLBERG, T. Ueber Conservirung von Evertebraten in ausgedehntem Zustand. Stockholm. (1891.) [II, E, i, a.]
 Abstract in BERGMANN (25), p. 271.
272. UDDEN, J. A. Geology of Jefferson County. Rep. geol. Surv. Iowa, xii, pp. 355-437, 1 map, 4 text-figg. (1903.) [II, D, x. III, B, iv, e.]
273. —. The geology of the Shafter Silver mine district, Presidio county, Texas. Bull. Univ. Texas Min. Surv. viii, 60 pp., 11 text-figg., 2 folding plates. [III, B, iii, b, 2; iv, b.]
274. UEXKUELL, J. von. Studien ueber den Tonus. II. Die Bewegungen der Schlangensterne. Zeitschr. Biol. xlv, pp. 1-37, pls. i, ii. [II, B, i, e, 5: c, vi, vii: D, iii, e; iv, e; vi; vii, e.]
275. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Anden Udgave. [General account of the geology of Denmark. Ed. 2.] Danmarks geol. Unders. iii. Raekke, No. 2, 360 pp., iii pls., text-figg. Kr. 4.50. [III, B, iii, b, 1.]
- VALETTE, A. (283) Zool. Rec. 1902. Abstract: by L. PERVINQUIÈRE, Geol. Centrbl. iv, p. 123 (15 Sept. 1903).
276. VERNON, H. M. Variation in Animals and Plants. Cr. 8vo, x+416 pp., text-figg. London: Paul, 5s. (Feb. 1903.) [II, F, viii.]
- VETTERS, H. See WALTHER, J. (281).
- VIGUIER, C. (286) & (287) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. ix, p. 678 (4 Nov. 1902).
277. —. Hybridations anormales. C.R. Ac. Sci. cxxxviii, pp. 1116-1118. (May.) [II, F, viii.]
278. —. Influence du milieu extérieur sur l'œuf. Rev. gen. Sci. xv, pp. 475-476. (30 May.) [II, F, viii.]
279. —. Développements anormaux indépendants du milieu. C.R. Ac. Sci. cxxxviii, pp. 1718-1720. (July.) [II, F, vii]

- VINASSA DE REGNY, P. [E.] (315) Zool. Rec. 1903. Review by J. LAMBERT, Rev. paleozool. ix, p. 94 (April, 1905). [iv, c.]
 —. See also AIRAGHI, C., CHECCHIA, G.
280. VOLZ, W. Zur Geologie von Sumatra. Beobachtungen und Studien. Pal. Abh. x, pp. 87–196, pls. i–xii, 3 maps, 45 text-figg. (Feb.) [III, B, iv, d.]
281. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Denk. Ges. Jena, xi, Haeckel Festschrift, pp. 133–214, pl. viii, 21 text-figg. (Mar.) [II, D, vi, e, f. III, B, iii, c, 1. IV, F.]
 Abstract: by H. VETTERS, N. Jahrb. Min. 1905, i, pp. 458–462 (July, 1905).
- WEDEKIND, W. (319) Zool. Rec. 1903. Abstract: by R. FICK, Zool. Centrbl. x, pp. 448–450 (19 June, 1903).
282. WELCH, R. Greensand Section at Whitehead. Irish Natural. xiii, p. 49. (Feb.) [III, B, iii, b, 2.]
283. WELSCH, J. Feuille de Niort. Bull. Carte geol. France, xi, pp. 117–121. (1900.) [III, B, iii, c, 2.]
284. WEYSSE, A. W. A synoptic text-book of zoology for colleges and schools. 8vo. New York and London: Macmillan. \$4.00. (Jan.) [II, E, i, d.]
285. WHITEAVES, J. F. *Uintacrinus* and *Hemiaster* in the Vancouver Cretaceous. Amer. J. Sci. (4), xviii, pp. 287–289. (Oct.) [III, B, iii, b, 1. IV, c.]
 —. See also DOWLING, D. B. (70).
286. WHITFIELD, R. P. Notice of a remarkable case of reproduction of lost parts shown on a fossil crinoid. Bull. Amer. Mus. xx, pp. 471–472, pls. xi, xii, xiii. (10 Dec.) [II, D, vii, f.]
 Abstract by R. RUEDEMANN, Geol. Centrbl. vii, p. 168 (15 Oct. 1905).
287. WILCKENS, O. Ueber Fossilien der oberen Kreide Sued-Patagoniens. Vorläufige Mittheilung. Centrbl. Mineral. 1904, pp. 597–599. [III, B, iii, b, 1.]
 —. See also LEUTHARDT, F. (152).
288. WILSON, E. B. Cytasters and Centrosomes in artificial parthenogenesis. Zool. Anz. xxviii, pp. 8–12. (23 Aug.) [II, F, viii.]
 Abstract: in J. R. Micr. Soc. 1905, p. 167 (April).
- WINGE, H. See PETERSEN, C. G. J. (215).
289. WOLLEMAN, A. Die Fauna des Untersenons von Querum bei Braunschweig. Centrbl. Mineral. 1904, pp. 33–38. (1 Feb.) [III, B, iii, b, 1.]
290. —. Alte und neue Aufschlüsse im Flammenmergel, Variansplaener und Turon in der Umgegend von Braunschweig. Jahresh. Ver. Braunschweig, xiv, pp. 1–4. (16 Nov.) [III, B, iii, b, 1.]
 Abstract: by J. LAMBERT, Rev. paleozool. ix, p. 46 (Jan. 1905).
291. WOOD, ELVIRA. On new and old Middle Devonian crinoids. Smithsonian Collect. xlvii, pp. 56–84, pls. xv, xvi, 9 text-figg. (6 Aug.) [II, B, ii, e: D, vii, f: F, vii, f. III, B, iv, f. IV, F.]
 Abstract: by R. RUEDEMANN, Geol. Centrbl. vi, p. 312 (15 Mar. 1905).
292. WOODCOCK, H. M. On *Cystobia irregularis* (Minch.) and allied "neogamous" gregarines. (Preliminary note.) Arch. zool. exp. Notes (4), ii, pp. cxxv–cxxxiii. (20 June.) [II, D, viii, b.]

293. WOODS, H. The genus *Desorella*. Geol. Mag. (n. s.), dec. v, vol. i, pp. 479-481, pl. xvi, 1 text-fig. (Oct.) [III, B, iii, c, 2. iv, c.]
Review : by J. LAMBERT, Rev. paleozool. ix, p. 45 (Jan. 1905).
294. WRIGHT, W. & POLKINGHORNE, B. C. The discovery of *Marsupites* in the Chalk of the Croydon area. Geol. Mag. (n. s.), dec. v, vol. i, p. 622. (Dec.) [III, B, iii, b, 1.]
295. *YOSHIWARA, S. [now TOKUNAGA]. Okinawa Shotō Ōshima Guntō no Uni-rui. [Echinoidea of Liukiu and Ōshima groups.] Dobuts. Z., Tokyo, xiii, pp. 172-174. (1901.)
YATSU, N. See WILSON, E. B. (288).
296. ZAHÁLKA, Č. Pásmo ix. křídového útvaru v Pojizeří. (Die ix. Zone der Kreideformation im Isengebirge.) SB. Bohmisch. Ges. 1903, Art. xxxii, 157 pp., 1 pl. [III, B, iii, b, 1.]
297. ZELENY, C. Studies in compensatory regulation. Science (n. s.), xix, p. 215. (5 Feb.) [II, D, vii, c.]
ZIEGLER, H. E. (337) Zool. Rec. 1903. Abstract : by R. S. BERGH, Zool. Centrbl. x, p. 443 (19 June, 1903).
298. —. Die ersten Entwicklungsvorgänge des Echinodermeneies, insbesondere die Vorgänge am Zellkörper. Denk. Ges. Jena, xi, Haeckel Festschrift. pp. 539-560, pl. xvi, 4 text-figg. (Mar.)
Abstract in LUDWIG (166). [II, F, iv.]
299. *ZLATARSKĪ, GH. N. Prinos k'm gheologhiyata na Īsk'rskiya prolom ot Sophiya do Roman i na s's'dnit mu pr'deli (Contribution à l'étude géologique du défilé de l'Isker, de Sofia à Roman et des pays limitrophes). Trud. B'lgar. Druzh. (Trav. soc. Bulgare Sci. nat., Sofia) 1904, No. 2, pp. 12-102, 1 map, viii pls
[III, B, iii, b, 2; d; e.]
Detailed Abstract by Author, Geol. Centrbl. iv, pp. 740-745 (Dec. 1904).
- ZSCHOKKE, F. See CHUN, C.
300. ZUR STRASSEN, O. Ueber die Mechanik der Epithelbildung. Verh. Deutsch. zool. Ges. 1903, pp. 91-112, 6 text-figg. (Oct. 1903.) [II, F, viii.]

II. BIOLOGY.

(A.) EVOLUTION.

- i. **General Principles** :—Vacant.
- ii. **Relations of Echinoderma** :—Morphology explained by descent from a *Dipleuraea* with preoral vesicle and 10 metameric segments, of which the posterior 5 pass forward and are applied to the anterior 5, forming the 'Pentastomaea'; HEROUARD (121).—Descent from a worm-like ancestor, already possessing rudiment of water-vascular system, general criticism of views of Semon (1888), Bütschli ('92), Seeliger ('93), Lang ('94), Bury ('95), Haeckel ('96), MacBride ('96), Bather (1900), and Perrier ('02); MEYER (190).—*Myzostoma asteriae* is of all organisms the nearest to the primitive Echinoderm, detailed comparison; SIMROTH (256).—Origin from pelagic worms, pelmatozoic theory criticised; PERRIER (211) p. 259.
- iii. **Phylogenies of smaller groups** :—Phylogeny of *Echinoderma*, general discussion of theories and acceptance of the Pelmatozoic theory as formulated by Bather; DELAGE (54) p. 431-437.—Primary Echinoderm larva derived from *Anomocystidae*, Hol. from *Amphoridea*, another branch of which leads to *Cyst.* & *Crin.*, from

Agelocystidae come *Ast.* & *Oph.*, and from *Cystoblastidae* descend *Ech.*; HALLER (111A) p. 112.—*Ech.* derived from *Ast.*, and neither from *Edrioasteroidea*; SPENCER (264).—General relations of groups of *Ech.*; DOUVILLÉ (66) p. 72.—Anterior ambulacrum of Spatangoids, its gradual specialization (p. 217), Evolution of plastron in Spatangoids; AGASSIZ (3).—Origin of *Pourtalesidae*; DE MEIJERE (57) p. 157.—Evolution of apical system in *Schizaster*, this and *Linthia* derived from *Periaster*; TORNQUIST (268).

(B.) MORPHOLOGY.

i. Anatomy:—

a. *ECHINODERMA*.

1. General Accounts:—Mainly recent Echinoderms, with original diagr. *Ast.*, *Oph.*, *Crin.* arm-sections, pedicellariae, otocyst, *Asterias* dissect., *Ech.* section, &c.; HALLER (111A).—Anatomy of Echinoderm type (p. 1-19, pls. i-x) comparative (p. 417-427); DELAGE (54).
2. Symmetries:—Plant-like appearance and geometric regularity of certain Echinoderms due to sedentary life; LANG (149).
3. Homologies of Classes:—Vacant.
4. Skeletal tissue or Stereom:—Crystalline nature; DOUVILLÉ (66) p. 71.
- 5-8. Vacant.
9. Nervous system and Sense-organs:—General account with examples from *Ophiocoma*, *Echinus*, and *Holothuria*; ROY. COLL. SURGEONS (237).
- 10-12. Vacant.

b. *HOLOTHURIOIDEA*.

1. General Account; DELAGE (54), p. 274-303, pls. xxxvi-xl.
- 2-8. Vacant.
9. Nervous System and Sense-organs:—See II, B, i, a, 9.
- 10, 11. Vacant.
12. Genital System:—Cords of germinal cells in *Holothuria* homologous with genital cord of *Ast.* and axial organ of *Crin.*; POLARA (220).

c. *ECHINOIDEA*.

1. General Account; DELAGE (54), p. 160-201, pls. xxvi-xxxv.
2. Symmetries:—Shape of test in *Cidaridae*, orientation of pentagons; AGASSIZ (3) p. 1.—*Hemiaster* not bilaterally symmetrical; BATHER (18) p. 300.—Ditto *Linthia*; NEWTON (196).
3. Homologies:—Vacant.
4. Stereom:—Structure of radioles; COMBES (45).
5. Skeletal Anatomy:—Chief modifications in relation to mode of life; DOUVILLÉ (66) p. 72.—Morphology of *Pourtalesid* test discussed; DE MEIJERE (57) p. 157-171.—Ditto (p. 121), anal snout *Spatangoidea* (p. 148), apical system, *Salenidae* (p. 35); AGASSIZ (3).—Ditto, *Schizaster*; TORNQUIST (268).—Ambital plates lengthened in various Spatangoids, cf. *Melonites*; AGASSIZ (3) p. 184.—Interambulacrals, splitting of, *Astropyga* and *Chaetodiadema*; MORTENSEN (195) p. 25.—Plastron of *Pilematechinus* compared with that of *Offaster*, *Abatus*, *Cardiaster*, *Stegaster*, et al., amphisternal derived from meridosternal; AGASSIZ (3) p. 163.—Stereum, *Echinocorytidae* and *Spatangoidea*; DE MEIJERE (57) p. 153.—Heteronomy, *Spatangoidea*, *Pourtalesidae*, &c.; op. cit. p. 161: normal in *Hemiaster*, ancient in *Linthia*; BATHER (18) p. 298: explanation of phenomenon; LAMBERT in Review.—Ambulacra, types of struc-

ture; MORTENSEN (195) p. 42.—Ambulacral plates, jaw-apparatus, *Palaeodiscus*; SPENCER (264).—Tubercles, crenelation and perforation, classificatory value; MORTENSEN (195) p. 42.—Fascioles, migration and modification; BATHER (18) p. 298: AGASSIZ (3) p. 179: DE MEIJERE (57) p. 165, 241.

Pedicellariae,—origin from radioles; HALLER (111A) p. 126.—Tetradactylous, origin of; MORTENSEN (194).—Origin of globiferæ (p. 33), no *Ech.* pedicellariae derived from or homologous with radioles (p. 39); MORTENSEN (195).—In many spp.; DE MEIJERE (57) passim, main results p. 244–248.—In *Toxopneustes pileolus*; HERDMAN (120) p. 140.—Podia, giant with large disc, their skeleton described, in *Micropyga*; DE MEIJERE (57) p. 60, 243.

6. Hydrocoel &c.:—See last entry.
- 7, 8. Vacant.
9. Nervous System:—See II, B, i, a, 9.
- 10, 11. Vacant.
12. Generative System:—Vide II, F, iii.—Chemical constitution of ovum in *Strongylocentrotus*; BERTOLO (26).

d. *ASTEROIDEA*.

1. General Account; DELAGE (54) p. 32–63, pls. xi–xvii.
- 2–4. Vacant.
5. Skeletal Anatomy:—Pedicellariae may in some cases be transformed radioles, and in so far are not homologous with *Ech.* pedicellariae; MORTENSEN (195) p. 39.
- 6–12. Vacant.

e. *OPHIUROIDEA*.

1. General Account; DELAGE (54) p. 106–136, pls. xviii–xxv.
- 2–4. Vacant.
- 5 & 10. Musculature and arm-skeleton, *Ophioglypha*; UEXKUELL (274).
- 6–8. Vacant.
9. Nervous System:—See II, B, i, a, 9.
10. Mesodermal tissues (exc. skeletal):—Vide e, 5.
11. Vacant.
12. Vide II, F, iii.—Gonads in arms of *Astroschema ferox*; KOEHLER (143) p. 163.

f. *CRINOIDEA*.

1. General Account:—As type of *Pelmatozoa*, based on *Antedon bifida*; DELAGE (54) p. 339–364, pls. xli–l.—Of Class [applicable only to recent forms]; HAMANN (112) p. 1415.
- 2–4. Vacant.
5. Skeleton:—Cirrals, syzygies, genital pinnules in *Antedon* spp.; GRIEG (107) p. 24.—IBB in a Senonian *Isocr.*, first discovery in the genus; JAEKEL (139) [but see BIGOT, 1899].—Stem, BB., and union of Br. in *Bathocr.*; GRIEG (107) p. 8.—Loboliths,—nature and function; FRIČ (88): Structure in *Camarocr.*; SCHUCHERT (249): explained by hollow roots of various *Crin.*, perhaps contained gonads; JAEKEL (132).
- 6–11. Vacant.
12. Gonads:—*Metacr.*; SPERRY (265): *Antedon hirsuta*; ANDERSSON (10).

g. *CYSTIDEA*.

1. General Account; DELAGE (54) p. 403–405.
5. Skeletal anatomy:—Plates of subjective groove in *Agelacr.* and *Lepidodiscus*; SPENCER (264).

h. *BLASTOIDEA*.

- General Account; DELAGE (54) p. 396–400.

ii. **Variation :—**

Determination of, vide II, F, viii; VERNON (276).

- a. In form:—size, &c., in *Melonites* due to local conditions; KLEM (142) p. 7.
- b. In form and surface characters:—Common in Echinoderms, esp. *Ophiothrix* and *Astropecten*; BELL in HERDMAN (120) p. 149, 150.—Size, number of rays, of madreporites, of mouths, of ani, position of exit of gonads, in *Phataria*; MONKS (193).—Spines and scales, *Ophiactis abyssicola*, *Ophiothrix fragilis*; GRIEG (106).
- c. In colour:—Colour in life,—many Echinoderms at Woods Hole (see list III, A, ii); CLARK (38): deep-sea *Ech.* (see list III, A, iv), with coloured drawings of *Phormosoma hispidum*, *Pourtalesia tannieri*, and *Cystechinus loveni*; AGASSIZ (3) passim, pls. A, B: various *Ech.*, its specific value (see list III, A, iii, iv); MORTENSEN (195): *Diadema*, *Stomopneustes*, *Toxopneustes*, *Culcita*; HERDMAN (120): various *Oph.* (see III, A, iii); KOEHLER (144): *Ophiura albida*, *Ophiocten*; GRIEG (106): spp. *Antedon* and *Actinometra*; CHADWICK (35).—In life and spirit, various Echinoderms from Patagonia (see III, A, ii); LORIOL (162).—(In spirit?) of numerous spp. of *Ech.* dredged by Siboga (see III, A, iii); DE MEIJERE (57).—In spirit, various *Oph.* (see III, A, iii); KOEHLER (143).
- d. Meristic variation:—
 1. Variation from pentamerous symmetry:—6 rays, *Ophiodera* sp.; KOEHLER (143) p. 154.—5 madreporites, but 1 stone-canal, *Gorgonocephalus*; CLARK (38) p. 562.
 2. Reduplication or absence of parts:—suppression of a gonopore in *Cidaris elegans*; DE MEIJERE (57) p. 24.—*Metacr.*; SPERRY (265).—Position of syzygies spp. *Antedon* and *Actinometra*; CHADWICK (35).—Number of IBr. in *Dolatocr.*; ROWLEY in GREENE (105) p. 191.
- e. Abnormalities:—*Pseudodiadema*; LISSAJOUS (153) p. 159, 160.—Apex, *Schizaster*; TORNQUIST (268) p. 387.—2 gonopores in madreporite, *Stephanocidaris*; MORTENSEN (195).—Fusion of rays, *Ctenodiscus*; MICHAÏLOVSKIJ (192) p. 171.—Ray bifurcate, *Ophiomusium*; KOEHLER (143) p. 64.—*Megistocr.* (p. 62), *Tylocr.* (p. 68), *Dolatocr.* (p. 72, 78), *Gemmaocr.* (p. 80), and remarks (p. 82); WOOD (291).—*Pseudocr.* (p. 230): *Coelocystis*, plates vertically divided (p. 248); SCHUCHERT (249).—Inferradial in *Pentremites*, and extra plate in radial circlet in *Nucleocr.*; ROWLEY in GREENE (105) p. 190.

iii. **Secondary Sexual Characters :—**

- a. Differences of Form or Structure:—*Porocidaris milleri*; AGASSIZ (3) p. 27.
- b. Differences of Colour:—? *Echinus angulosus*; BELL (22A).
- c. Protection of Young:—*Cycethra verrucosa*; MEISSNER (186).—*Antedon hirsuta* on cirri; ANDERSSON (10).—Complete account; LUDWIG (164): Addendum; (165).

(C.) **PHYSIOLOGY.**

- i. **General** :—*Echinoderma* in general (p. 19–23), comparative (p. 427), *Hol.* (p. 303–309), *Ech.* (p. 201–203), *Ast.* (p. 63–68), *Oph.* (p. 136–139), *Crin.* (p. 364–366); DELAGE (54).—Exhaustive account of chemical physiology, esp. blood, respiration, nutrition, excretion, poisons, muscles, stereom, pigments, gonads, and conditions of existence; FUERTH (91).

- ii. **Circulation** :—Regulated by osmosis in *Strongylocentrotus*, *Sphaerechinus*, *Spatangus*, *Holothuria*, and *Stichopus* ; HENRI (116).
- iii. **Respiration** :—Vide c, i.
- iv. **Alimentation and Digestion** :—Ferments, *Holothuria*, *Spatangus*, *Asterias*, last strongest ; CLERC (41).
- v. **Excretion and its Products** :—Pigments,—nature of ; MANDOU (182) p. 370: products of metabolism without selective value ; HARGITT (113) p. 143.
Colour, see II, B, ii, c.
- vi. **Sensation** :—Discussion of consciousness in action of Echinoderms ; LUKAS (167).—Sense-organs on podia, *Ophiopholis aculeata* ; ÖSTERGREN (204) p. 564.—Sensibility of spines, reaction to light, *Ophioglypha* ; UEXKUELL (274) p. 4.
- vii. **Miscellanea and Experimental Physiology** :—Functions of podia, *Oph.* (vide II, B, vi) ; ÖSTERGREN (204).—Movement of stomach-muscle, *Ophioglypha* ; UEXKUELL (274) p. 4.—Solution of lime in test of deep-sea *Ech.*, *Urechinus*, *Cystechinus*, *Pilematechinus* ; AGASSIZ (3) p. 153, 159, 166.—Freezing-point of body-fluid in *Echinus* and *Cucumaria* ; DEKHUYZEN (51).—Effect of artificial sea-water on *Asterias* ; TRUE (270).—Poisoning *Ophioglypha* by slate bottom ; UEXKUELL (274) p. 3.
Amount of copper in *Asterias* and *Stichopus* ; DUBOIS (72).—Arsenic in *Pedicellaster*, *Strongylocentrotus*, *Stichopus* ; BERTRAND (27).—Chemical constitution of ovum, *Strongylocentrotus* ; BERTOLO (26).

(D.) BIONOMICS.

- i. **General Accounts** :—Vacant.
- ii. **Special habits** :—Boring,—in coral ; FINCKH (78) p. 141: of *Echinostrephus molare* induces spiral twist in actinal radioles ; HERDMAN (120) p. 139.
- iii. **Habitat** :—(a) Various spp.,—in N. polar basin (see list III, A, v) ; MICHAÏLOVSKIÏ (192) : Dröbaksund (vide III, A, ii) ; KIAER (140) : near Plymouth ; MAR. BIOL. ASS. (184).—*Hol.*, *Ech.*, *Oph.*, atoll of Minikoi ; GARDINER (95) p. 44, 47, 338. (c) *Ech.* :—Influence on classification ; DOUVILLÉ (66) p. 72.—*Stomopneustes variolaris*, *Echinostrephus molare* ; HERDMAN (120).—*Psammechinus verruculatus*, *Gymnechinus pumilio*, & *Echinoneus cyclostomus* on *Lithothamnion* ; DEMEIJERE (57) p. 89, 92, 140.—Boring in platform of coral reef ; FINCKH (78) p. 141. (e) *Oph.* :—Change of, acts as poison ; UEXKUELL (274) p. 3. (f) *Crin.* :—Diverse views as to *Holopus* and *Cyathidium* ; HENNIG (115) p. 55 : RAVN (223).
- iv. **Feeding** :—(b) *Hol.*, not on coral or seaweed, but on microscopic organisms in coarse sand ; GARDINER (95) p. 338 : FINCKH (78) p. 141.—Diatoms in gut of *Holothuria* at Civita Vecchia ; LANZI (151). (c) *Ech.* same as *Hol.* (supra) ; GARDINER (95). (e) *Ophioglypha* ; UEXKUELL (274) p. 3, 12.—*Astrophytida*, on plankton ; ÖSTERGREN (204) p. 564.
- v. **Defence and Protection** :—Vacant (but see next entry).
- vi. **Locomotion** :—Resting position and movements of *Ophioglypha* (p. 4), its locomotion (p. 6), turning over (p. 10), protective (p. 15) ; UEXKUELL (274).—Podia serve for fixation and so assist locomotion by flexure of rays, in *Ophiocoma*, *Amphiura*, *Ophiopholis*, and *Ophiura*, so also in *Hol.* ; ÖSTERGREN (204).—*Geocoma* and *Saccocoma*, their tracks in Solnhofen Plattenkalk ; WALTHER (281) p. 200, 201 and fig.

- vii. **Autotomy and Regeneration**:—(a) See under heading 'Physiologie' passim; DELAGE (54). (d) Illustrated by photographs of specimens in collection F. D. Snyder, Ashtabula, O.; McCLURE (173).—Regen. of complete starfish from ray broken off at a distance from the body in *Linckia diplax* and *L. pacifica*; KELLOGG (139).—Autot. of rays, also regen. of new rays from rays cut off at a distance from the disc, in *Phataria*; MONKS (193). (e) Autot. *Ophioderma*, *Ophioglypha*; UEXKUELL (274) p. 13.—Regen. of rays in *Ophioglypha* is quicker the more rays are removed, except when all are removed; ZELENY (297).—Loss of dorsal covering of disc; BELL in HERDMAN (120) p. 148. (f) Regen. viscera, *Antedon indica*; CHADWICK (35).—Loss of arms without regen., *Megistocr.*; WOOD (291) p. 66.—Regen. arms, *Barycr.* and *Platycr.*; WHITFIELD (286).
- viii. **Parasites and Commensals**:—(b) *Cystobia*, gregarine, spp. parasitic in *Holothuria* and *Cucumaria*; WOODCOCK (292).—*Tetrarhynchus*, cestode, in holothurian, ? *Molpadia*; SHIPLEY (253) p. 147.—Numerous mollusca in gut of *Stichopus* et al.; KIAER (140) p. 70, 71.—*Synapticola*, lamellibranch in *Synapta inhaerens* and comparison with similar cases; MALARD (180).—*Pinnotheres villosissimus*, brachyuran in cloaca of *Muelleria lecanora*; DOFLEIN (64) p. 126. (c) *Anophrys*, ciliate protozoan in intestine of *Strongylocentrotus*, *Sphaerechinus*, and *Arbacia*; DI MAURO (63).—*Siphonostoma* and *Scalesetosus*, polychaetes on *Echinus*; *Montacuta*, mollusc on *Spatangus*; *Tellinys*, mollusc on *Echinocardium*; MAR. BIOL. ASS. (184) p. 210, 211.—*Ichthyonema* (olim *Echinonema* Gemm. non v. Linst.) nematode in perivisceral cavity of *Echinus esculentus*; GEMMILL & LINSTOW (99); GEMMILL (98).—Parasitic mollusc?, in radiole, *Astropyga radiata* (p. 22), gastropod and crab on *Salmaeis bicolor* (p. 66), crab on *Toxopneustes pileolus* (p. 120); MORTENSEN (195).—*Arete*, alpheid on oral surface of *Heterocentrotus*; COUTIERE (48). (e) *Mucronalia*, gastropod on *Ophiothrix deposita* and *O. crassispina*; KOEHLER (143) p. 146, 147.
- ix. **Echinoderms as Food**:—Of man, *Cucumaria frondosa*; CLARK (38) p. 548.—Of Genoese, *Ech.*; PARONA (207) p. 384.—Of fish, *Echinarachnius*, *Ophiopholis*, *Amphiura*, and *Hol.*; CLARK (38) p. 549.—Of crabs or fish, *Tetrodiscus* (= *Echinodiscus*) *auritus*; FOURTAU (83) p. 425.
- x. **Echinoderms in Geological Aspect**:—Coral reefs degraded by *Hol.*; GARDINER (95) p. 166, 338: by *Ech.*, but not *Hol.*; FINCKH (78) p. 141.—*Ech.* holes in the reef at Mamangúape (p. 53, pl. xliii), at Pernambuco (p. 62, pl. l), at Itaparica, Bahia (p. 247, pl. lxxix), at Maceio due to *Echinometra subangularis* (p. 271); BRANNER (32).
Ech. fossils in flint; BATHER (17).—Impregnation of *Ech.* tests in chalk with crystalline silica; MEUNIER (189).
Echinocardium cordatum in lumps of shelly limestone and sandst. now forming in Danish waters; NORDMANN (200).—"Echinoderm conglomerate," chiefly remaniée *Ech.* from top of Cretaceous; GRÖNWALL (109) p. 28 & (108) p. 428.—Plates of *Ech.* in Lower Cretaceous reef-rock; CAYEUX (34) p. 96, 97.—*Crin.* limestone.—Lower and Mid. Lias, important in Swiss and French Alps; LORY (163).—Bathonian; LEUTHARDT (152).—Composition, mode of occurrence in Bajocian, Mont d'Or; RICHE (228) passim and pl. B; SCHARDT (243) p. 304.—Lenticles 80 cm. thick of *Crin.* pinnulars; MAIRE (178).—*Sphaeronis* as rock former; HOLM (126) p. 47.
Association of sand and *Crin.* stems in St. Louis beds and modern Atlantic; UDDEN (272) p. 391.

(E.) MISCELLANEOUS.

i. Research and Instruction:—

- a. Preservation:—Killing and preservation of Echinoderms; CLARK (38) p. 549.—Collecting, especially on coral-reefs, and preservation in natural position of *Hol.*, *Ech.*, *Crin.*; PLATE (219).—*Hol.*, killed by methyl blue; MADER (175) p. 208: Preservation expanded; TULLBERG (271).
 - b. Methods of research:—Toxic action of ordinary distilled water on ova of *Arbacia*, but artificial sea-water made with purer distilled water is better than natural sea-water, perhaps owing to absence of ammonia; LYON (170).—Rearing *Ast.* larvae; DELAGE (52): on culture of alga, *Chlorella*; HÉROUARD (122).—Preparation of complete series *Ech.* larvae 10–46 hours; SCHMIDT (246).—Methods of identifying Echinoderms, esp. *Hol.*; CLARK (38) p. 549.—Examination of *Ast.* and *Ech.* for arsenic; BERTRAND (27).
 - c. Museum Exhibits and Collections:—Museum label, *Ech.* in flint; BATHER (17).—Nantes Museum, Gourdon coll. Pyrenean *Ech.* Senonian and Eocene (qq.v.); GOURDON (102).—List of type-specimens of *Ech.* and *Crin.* in museums and private collections of Grenoble; REBOUL (224).—*Echinoderma* in Naturhist. Mus. Hamburg, and works dealing therewith; KRAEPELIN (146).—Fossil Echinoderms added to U. S. Nat. Mus.; SCHUCHERT (247, 248).
 - d. Instruction:—Text-books, WEYSSE (284) pp. 85–104: advanced; DELAGE (54): comp. anat.; HALLER (111A).
- ii. **Economics**:—see II, D, ix, Echinoderms as food of man.—Of Woods Hole Echinoderms; CLARK (38) p. 548.—*Ast.* damage to fisheries, summary; ALBERT (5).
- iii. **Bibliography**:—General selected; DELAGE (54) p. 442–460.—Palaeozoic *Ech.*; KLEM (142) p. 76–97.—*Crin.* [*? Pelmatozoa*] begun; HAMANN (112) p. 1420.—Echinoderms in Rumpf's "Rariteitkamer"; MARTENS (185) p. 131.—Literature for 1892 abstracted; BERGMANN (25): for 1904; LUDWIG (166).
- iv. **Historical, Popular notions, &c.**:—Summary of papers on fossil Echinoderms in Geol. Mag. 1864–1903; ANON. (12) p. 52–53.—History of research on brood-protection; LUDWIG (164).—Names applied to Class *Crin.*; HAMANN (112) p. 1419.—The fate of G. Troost's collection and the MS. of his monograph on Crinoids of Tennessee (p. 219), history of *Camarocr.* = *Lobolithus* (p. 254); SCHUCHERT (249).—'Abou-Chokah,' father of thorns, Bedouin name for *Diadema setosum* (p. 413), 'Halaouan' for *Echinometra lucunter* (p. 416); FOURTAU (83).

(F.) AUXOLOGY.

- i. **General Principles**:—Vacant.
- ii. **General Accounts**:—Echinoderma in general (p. 23–30, pls. vii–x) comparative (p. 428–431), *Hol.* (p. 310–318), *Ech.* (p. 203–215), *Ast.* (p. 68–82), *Oph.* (p. 139–144), *Crin.* (p. 366–375); DELAGE (54).
- iii. **Formation of Gonads**:—Myelin in nucleus and nucleolus of *Ech.* ovum; ALBRECHT (6) p. 99, 108.—Plasmodia in ovaries, *Arbacia*, *Echinus*, *Asteracanthion*; JANSSENS (136) p. 263.—Spermatozoa, *Ophiura*, *Ophiothrix*, *Echinus*; RETZIUS (226) p. 27–28, pl. xii.—Structure and formation of ova, *Antedon*; ANDERSSON (10).
- iv. **Oviposition, Fertilisation, and Segmentation**:—Breeding period, *Ech.* *Oph.* *Ast.* *Hol.* Jamaica; ANDREWS (11) p. 76: *Ophiothrix*, *Ophiura* at la Hougue; MALARD (179) p. 192.—Copu-

- lation (?) and fertilisation of ova, *Antedon hirsuta*; ANDERSSON (10).—Fertilisation due to entrance of water into ovum, not to sperm; SCHUECKING (250).—Fertilisation and segmentation, general discussion; HARTOG (114).—Rhythmic production of CO₂ from sperm-ova of *Arbacia* during cleavage, also resistance to KCN; LYON (169).—Electrical potential developing ova of Turtle and *Fundulus*, changes compared with rhythms previously observed in Echinoderm ova; HYDE (130).—Outer protoplasmic layer, nature of mitosis in *Echinus*, *Strongylocentrotus*, *Ophiothrix*; ZIEGLER (298).—Morula and gastrula to first rudiment of coelom, mesenchyme cells becoming skeletogenous, *Ophiothrix*; MACBRIDE (172).—Blastula to Pluteus of *Echinus microtuberculatus* exact time-stages, studied by sections; SCHMIDT (246).
- v. **Larval Stages**:—(a) Generalised diagr.; HALLER (111A) p. 110.—Rearing larvae; HÉROUARD (122). (d) Parthenogenetic larvae of *Asterias* reared to early Brachiolaria stage and described; DELAGE (52). (f) Fixed stage, *Antedon*; GRIEG (107) p. 19, 37.
- vi. **Organogeny**:—(c) *Echinoidea*:—
5. Development of coronal plates, *Arbacia*; AGASSIZ (3) p. 54.
- vii. **Post-larval Growth-stages**:—(b) Growth-changes, —*Thyone briareus*; CLARK (38) p. 568: *Cucumaria*; MICHAILOVSKIJ (192). (c) Growth-changes,—test of *Cidaridae*, shape, anal system, coronal plates, peristomial plates, tubercles (p. 1–18), *Dorocidaris panamensis* (p. 21, 22), *Porocidaris cobosi* (p. 30), *Salenia miliaris* (p. 42), *Arbacia* (p. 54), *Dermatodiadema* (p. 60, 64), *Echinothuridae* (p. 75), *Phormosoma* (p. 86, 109), *Asthenosoma* (p. 113), *Brissopsis* (p. 190); AGASSIZ (3): *Mellita pentapora*; CLARK (38) p. 565.—Young,—of *Cidaris elegans*, descr. (p. 25), *Phormosoma* (p. 28), *Podocidaris* (p. 68); DE MEJERE (57): *Hemister*, *Arbacia*; LORIOU (162): *Stephanocidaris* (p. 8), *Salmacis* (p. 71, 73), Protechinus stage, *Phormosoma* (p. 54 & fig.); MORTENSEN (195).—Growth in *Melonitidae*, criticism of JACKSON & JAGGER; KLEM (142) p. 2. (d) Growth-stages,—*Leptotyphaster*; MICHAILOVSKIJ (192).—Growth of *Asterias rubens* in given time; KIAER (140) p. 74.—Brepheic *Asterias*, absence of specific distinction; CLARK (38) p. 551. (e) Association of different aged *Ophiura* in warm areas but not in cold; GRIEG (106) p. 22.—Growth-changes,—*Gorgonocephalus lincki*; GRIEG (106) p. 38: *Ophiopleura*; MICHAILOVSKIJ (192). (f) Stalked young, *Antedon hirsuta*; ANDERSSON (10).—Young *Megistocr.*; WOOD (291) p. 59. (g) Growth-stages in *Pseudocr.* (p. 236) in *Sphaerocystis* (p. 250, 252); SCHUCHERT (249).
- viii. **Developmental mechanics and Experimental Embryology**:—Degeneration of ovules, *Strongylocentrotus*; DUBUISSON (73).—Asters in *Toxopneustes* and *Echinarachnius*, observations by N. YATSU, reply to PETRUNKEWITSCH; WILSON (288).—Mechanism of epithelium-formation illustrated from *Ech.* blastulae; ZUR STRASSEN (300).
- Giant and monster larvae produced by fusion of one or more morulae with plasmodia, *Arbacia*; JANSSENS (136).—Blastomeres of *Psammechinus* cut apart, stained *intra vitam*, and reunited to form morulae of new individuality, which proceed with development; GARBOWSKI (94).—Abnormal development often due to nature of gonads, not to environment; VIGUIER (279).—Fertilisation, normal or artificial, produces difference between osmotic pressure and surface-tension, equilibrium restored by cleavage; SPAULDING (262).
- The determination of variation, account of Author's experiments on *Ech.* sperm-ova, (163) Zool. Rec. 1895, (214) Zool. Rec. 1898, (240) Zool.

Rec. 1899, (337 & 338) Zool. Rec. 1900 ; VERNON (276) p. 105, 168, 190, 217, 229, 296.—Vitality of the ovum, reaction to external stimuli, summary of recent work ; LOISEL (160).—Susceptibility to heat and cold of *Arbacia* sperm-ovum and production of carbon dioxide, vary in rhythms ; LYON (171).—Ovulase, i.e. extract of spermatozoa of *Strongylocentrotus lividus* and *Echinus esculentus*, action on ova ; PIERI (218).—Poison-effect of alcohols on *Psammechinus* ova ; FUEHNER (89).—Influence of alcohols of differing strengths on *Psammechinus* and *Strongylocentrotus* development ; FUEHNER (90).—Action of potassium cyanide on *Ech.* ovum ; JACKSON (131).—Antagonistic poisons and development of *Ech.* and *Ast.* embryos ; SOLLMANN (259).—Effect of anisotonic solutions and saponin on ova of *Asterias* and *Arbacia* ; SOLLMANN (260).—Influence of alkaline and acid sea-water on fertilization of *Ech.* ova ; LOEB (159).—Immunity of *Ech.* sperm-ova to ether, H Cl, K Cl, and Na Cl increases up to segmentation ; SPAULDING (263).—Solutions in which *Ech.* ova can develop ; LOEB (157).—Role of Chlorine, OH, Sodium, Potassium, Calcium, SO₄, Carbonate, and Magnesium in developing larvae *Ech.* and *Ast.* ; HERBST (117).

Hybridization :—*Strongylocentrotus purpuratus* ♀ × *Asterias capitata* ♂, *A. ochracea* ♂, *Pycnopodia spuria* ♂, *Asterina* ♂, and an *Ophiurid* ♂, in normal, alkaline, and acid sea-water, development of hybrids ; LOEB (155, 158, 159) : Note on the preceding ; ABRIC (1).—*Strongylocentrotus* ♂ × *Sphaerechinus* ♀, and vice versa ; VIGUIER (277).—BOVERI (31) maintains the observations and conclusions of his paper (23) Zool. Rec. 1903 against the criticism of DRIESCH (69) Zool. Rec. 1903.

Artificial Parthenogenesis :—Critical summary of recent work ; BOHN (29) : reply ; VIGUIER (278).—General discussion of results on *Ech.* ovum ; KOSTANECKI (145) p. 86 : ditto from standpoint of chemical physiology ; FUERTH (91) p. 602.—*Strongylocentrotus*, and *Psammechinus*, relation of chromosomes ; PETRUNKEWITSCH (217).—Induced by drying ova, in *Asterias rubens* ; GIARD (100).—Carbonic acid after shaking, ova of *Strongylocentrotus* ; DELAGE (53).—Carbonic acid larvae of *Asterias* reared ; DELAGE (52).—Induced in *Arbacia* ova by concentration of sea-water, description of mitosis and following stages ; HUNTER (128).—Vitelline membrane produced on unfertilised ova of *Echinus* and *Strongylocentrotus* by traces of silver salts and followed by incomplete segmentation ; HERBST (119).—Difference between *Ast.* and *Ech.*, membrane formation and cytolysis in *Ech.*, nature of stimulus ; LOEB (156).—Merogony, experiments on *Arbacia pustulosa* and *Sphaerechinus granularis* ; ARIOLA (13).—*Asterias* ; GARBOWSKI (93).—Total failure of all experiments at Naples, Jan.—June 1903 ; JANSSENS (136) p. 250.

III. DISTRIBUTION*.

A. GEOGRAPHICAL.

- i. **General** :—Distrib. of *Ech.* in general, its methods, ocean transport ; AGASSIZ (3) p. 219.—Distrib. of larvae as bearing on distrib. of adults ; GARDINER (96).—The bathymetric and geographic distrib. of each genus is given by DELAGE (54).—Distrib. of brood-protecting Echinoderms ; LUDWIG (164).—Distrib. of genera of *Ech.* continued from 1903 ; MEISSNER in HAMANN (112).—Abundance of *Crin.* individuals in northern seas contrasted with paucity of genera and spp., vice versa in southern seas ; GRIEG (107).

* For the species found, refer to generic names under IV.

ii. Atlantic Ocean and adjacent Seas:—

North Sea, Cold-water area, *Oph.* fauna discussed, also other Echinoderms (pp. 5-15) *Oph.* collected "M. Sars" here and Norway coasts, also Arctic to Spitzbergen, distrib. of each sp. discussed, *Ophiopleura*, *Ophiura*, *Ophiocten*, *Amphiura*, *Amphilepis*, *Ophiactis*, *Ophiopus*, *Ophiopholis*, *Ophiacantha*, *Ophiothrix*, *Ophioscolex*, *Asteronyx*, *Gorgonocephalus*, *Bathyiaster*, *Pourtaleisia*; GRIEG (106).—General discussion of *Crin.* fauna, esp. of Norway coasts, distrib. of each sp., *Bathyer.*, *Rhizocr.*, *Antedon*; GRIEG (107).

Norway,—Trondhjem, *Psolus* n. sp.; ØSTERGREN (203).—Drøbaksund, *Stichopus*, *Mesothuria*, *Strongylocentrotus*, *Amphidetes*, *Asterias*, *Astropecten*, *Archaster*, *Ophioglypha*, *Ophiopholis*, *Ophiothrix*; KIAER (140).

British coasts,—Ayrshire, common Echinoderms; SMITH (257).—Firth of Clyde, numbers of each species; MCINTOSH (174).—Mouth of R. Colne, *Henricia*; COLE (43).—Plymouth, list with locc. of *Hol. Ech. Ast. Oph. Crin.*; MAR. BIOL. ASS. (184): *Cucumaria*; PACE (205).

French Coast,—La Hougue, variations in benthos, *Hol.*, *Ech.*, *Oph.*; MALARD (179) p. 192, 195.—B. of Biscay, *Ech.*, *Ast.*; ALBERT (4).

Portugal, Echinoderm fauna,—N.; (198): S.; (199): NOBRE.

Mediterranean—near Capri,—plankton, larval *Synapta*, on mud *Ankyroderma*, *Echinocardium*; LO BIANCO (154).

Black Sea, *Amphiura*, *Synapta*, *Cucumaria*; SOVĬNSKĬI (261).

America,—Woods Hole, shallow-water Echinoderm fauna, *Asterias*, *Cribrella*, *Stolaster*, *Ophiura*, *Ophioglypha*, *Ophiopholis*, *Amphipholis*, *Gorgonocephalus*, *Arbacia*, *Strongylocentrotus*, *Echinarachnius*, *Melitta*, *Cucumaria*, *Thyone*, *Caudina*, *Trochostoma*, *Synapta*; CLARK (38).—Bathymetric and geographic range of W. Indian *Ech.* fauna; AGASSIZ (3) p. 218.—Jamaica, *Ech. Oph. Ast. Hol.*; ANDREWS (11) p. 76.—Argentine Patagonia, E. coast, *Hemiasiter*, *Arbacia*, *Echinus*, *Encope*, *Cycethra*, *Asterina*, *Echinaster*, *Lahillea*, *Gastraster*, *Asterias*, *Ophiactis*, *Ophioceramius*; LORIOI (162).

iii. Indian Ocean and adjacent Seas:—S. Africa, S. & E. coasts,

various locc., *Ech.*, esp. *Astropyga*, *Phormosoma*, *Echinus* n. sp., *Palaeolampas*, *Urechinus*; BELL (22A).—G. of Suez, *Ech.* fauna, *Rhabdocidaris*, *Diadema*, *Heterocentrotus*, *Echinometra*, *Echinus*, *Clypeaster*, *Tetradiscus*, *Echinolampas*, *Lovenia*, *Metalia*, *Schizaster*, *Moira*; FOURTAU (83).—Oman, *Eobrissus*; BELL (22).—Ceylon, *Cidaris*, *Stephanocidaris*, *Phyllacanthus*, *Diadema*, *Echinothrix*, *Stomopneustes*, *Pseudoboletia*, *Echinostrephus*, *Temnopleurus*, *Salmacis*, *Toxopneustes*, *Fibularia*, *Clypeaster*, *Echinanthus*, *Laganum*, *Echinodiscus*, *Echinoneus*, *Echinolampas*, *Maretia*, *Lovenia*, *Schizaster*, *Astropecten*, *Luidia*, *Stellaster*, *Anthenea*, *Goniodiscus*, *Pentaceros*, *Culcita*, *Asterina*, *Ophidiaster*, *Linckia*, *Nardoa*, *Metrodora*, *Retaster*, *Echinaster*, *Pectinura*, *Ophiura*, *Amphiura*, *Ophionereis*, *Ophiocnemis*, *Ophiocoma*, *Ophiarachna*, *Ophiothrix*, *Ophiomaza*, *Ophiopteron*, *Ophiomyza*; HERDMAN (120): *Antedon*, incl. 1 n. sp., and *Actinometra*, coll. Herdman; CHADWICK (35).—B. of Bengal, *Phormosoma* n. sp.; MORTENSEN (194).—G. of Siam, *Stephanocidaris*, *Diadema*, *Astropyga*, *Chaetodiadema*, *Echinothrix*, *Salmacis*, *Pleurechinus*, *Gymnechinus*, *Toxopneustes*, *Parasalenia*; MORTENSEN (195).

Malay Archipelago,—zoogeographic remarks (p. 218), complete list of *Ech.* (p. 201-214) with special notes or descriptions of spp. of *Cidaris*, *Phormosoma*, *Asthenosoma*, *Calveria*, *Araeosoma*, *Hapalosoma*, *Hygrosoma*, *Tromikosoma*, *Sperosoma*, *Salenia*, *Aspidodiadema*, *Dermatodiadema*, *Diadema*, *Echinothrix*, *Chaetodiadema*, *Astropyga*, *Micropyga*, *Hemipedinia*, *Coelopleurus*, *Podocidaris*, *Prionechinus*,

Trigonocidaris, *Genocidaris*, *Pleurechinus*, *Temnopleurus*, *Salmacis*, *Mespilia*, *Stomopneustes*, *Psammechinus*, *Gymnechinus*, *Toxopneustes*, *Triopneustes*, *Pseudoboletia*, *Parasalenia*, *Selenechinus* n. g., *Echinometra*, *Heterocentrotus*, *Echinocyamus*, *Fibularia*, *Laganum*, *Alexandria*, *Clypeaster*, *Echinodiscus*, *Echinoneus*, *Echinobrissus*, *Aphanopora*, *Echinolampas*, *Neolampas*, *Stereopneustes*, *Stegaster*, *Sternopatagus*, *Pourtalesia*, *Palaeostoma*, *Palaeopneustes*, *Plesiozonus*, *Linopneustes*, *Hemiaster*, *Faorina*, *Moirā*, *Schizaster*, *Brissus*, *Metalia*, *Brissopsis*, *Maretia*, *Breynia*, *Lovenia*, *Aerope*, *Aceste*, *Homolampas*, *Phrissocystis*, and *Palaeotropus* (vide IV, c); DE MEIJERE (57) passim, list of n. spp. p. 238.—Deep-sea *Oph.* of 'Siboga,' *Pectinura*, *Ophiopoeza*, *Ophiopyren*, *Ophioconis*, *Ophiopallas*, *Ophiocirce*, *Ophiotrochus*, *Ophioceramus*, *Ophiomoeris*, *Ophiocrates*, *Ophiernus*, *Ophiolypus*, *Ophiozona*, *Ophiomidas*, *Ophiomastus*, *Ophiopyrgus*, *Ophioleuce*, *Ophiochrysis*, *Ophioglypha*, *Ophiomusium*, *Ophioplax*, *Ophiochiton*, *Ophiodoris*, *Amphiura*, *Ophiactis*, *Ophiotholia*, *Ophiomyces*, *Ophiacantha*, *Ophioplithaca*, *Ophiomitrella*, *Ophiocamax*, *Ophiothamnus*, *Ophiomytis*, *Ophiotoma*, *Ophioscolex*, *Ophiothrix*, *Ophiobyrsella*, *Ophiodera*, *Astrotoma*, *Astrogomphus*, *Astroceras*, *Astrocharis*, *Astrochema*, *Ophiocreas*, *Astronyx*; KOEHLER (143).—Amboina, Echinoderms described by Rumpf; MARTENS (185) p. 131: list of new Echinoderms collected by Semon; SEMON (252): *Oph.* descr. by Brock and other *Oph.* mostly this region revised, vide *Ophiopaepale*, *Ophiothyreus*, *Ophioglypha*, *Ophiactis*, *Amphiura*, *Ophiocnida*, *Ophionereis*, *Ophiomastix*, *Ophiocoma*, *Ophiarachna*, *Ophiothrix*, *Lütkenia*, *Ophiocathlops*, *Ophisphaera*, *Ophiolophus*; KOEHLER (144).

iv. **Pacific Ocean and adjacent Seas:**—Various locc., n. spp. of *Chaetodiadema*, *Opechinus*, *Pleurechinus*, *Microcyphus*, *Gymnechinus*; MORTENSEN (195).

Japan, *Araeosoma* n. sp., *Asthenosoma*, *Calveria*; MORTENSEN (194).

Panama, deep sea *Ech.* specially discussed, also others and some from other regions, see especially *Abatus*, *Acrosalenia*, *Aerope*, *Agassizia*, *Amphipneustes*, *Araeosoma*, *Arbacia*, *Archaeopneustes*, *Argopatagus*, *Aspidodiadema*, *Asthenosoma*, *Atelospatangus*, *Bothriocidaris*, *Brissopsis*, *Calveria*, *Calymne*, *Cassidulus*, *Centrocidaris*, *Cidaris*, *Conolampas*, *Cystechinus*, *Dermatodiadema*, *Dialithocidaris*, *Dorocidaris*, *Echinocrepis*, *Echinolampas*, *Gauthieria*, *Genicopatagus*, *Goniocidaris*, *Histocidaris*, *Homolampas*, *Hoplosoma*, *Hygrosoma*, *Kanptosoma*, *Lambertia*, *Lepidechinus*, *Linopneustes*, *Lysechinus*, *Melonites*, *Moirā*, *Nacospatangus*, *Neolampas*, *Oligoporus*, *Palaeobrissus*, *Palaeotropus*, *Paleopneustes*, *Parabrissus*, *Periaster*, *Petalocidaris*, *Phormosoma*, *Phrissocystis*, *Pilematechinus* n. g., *Plesiodiadema*, *Plesiozonus*, *Plexechinus*, *Porocidaris*, *Pourtalesia*, *Rhynchopygus*, *Salenia*, *Schizaster*, *Spatagocystis*, *Spatagodesma*, *Sperosoma*, *Sternopatagus*, *Temnechinus*, *Tetracidaris*, *Toxobrissus*, *Urechinus*; Bathymetric and geographic range of Panamic *Ech.* fauna (p. 218); AGASSIZ (3).

Australia,—Victoria, *Goniocidaris*, *Strongylocentrotus*, *Microcyphus*, *Amblypneustes*, *Holopneustes*, *Echinocyamus*, *Eupatagus*, *Echinocardium*, *Linthia*; HALL (111).

New Zealand, list of *Echinoderma*; HUTTON (129).—*Cucumaria*; PERRIER (213).

v. **Arctic Ocean and adjacent Seas:**—*Ast.* fauna, esp. *Asterias*, *Bathyiaster*, *Ilyaster*, *Rhegaster*, *Poraniomorpha*, *Lasiaster*, *Solaster*, *Stichaster*; ÖSTERGREN (202).—Between Nova Zembla and Franz-Josef's Ld. *Elpidia*, *Cucumaria*, *Phyllophorus*, *Psolus*, *Eupyrigus*, *Trochostoma*, *Myriotrochus*, *Strongylocentrotus*, *Schizaster*, *Pourtalesia*, *Asterias*, *Cribrella*, *Hymenaster*, *Pteraster*, *Lophaster*, *Solaster*, *Crossaster*, *Rhegaster*, *Leptoptychaster*, *Ctenodiscus*, *Pontaster*, *Pluto-*

- naster, *Ophiopleura*, *Ophiura*, *Ophioglypha*, *Ophiocten*, *Amphiura*, *Ophiopholis*, *Ophiacantha*, *Ophioscolex*, *Gorgonocephalus*, *Antedon*; MICHAÏLOVSKIÏ (192).—Spitzbergen, Echinoderms chiefly on W. coast; ROEMER (229): *Trochoderma elegans*, *Ophioglypha nodosa*, and remarks on records of other echinoderms; MICHAÏLOVSKIÏ (191).
- vi. **Antarctic Ocean and adjacent Seas**:—Complete list of litoral *Ast.* from American subregion of South Sea, esp. *Diplasterias*, *Asterias*, *Cribrella*, *Cycethra*, and comparison with their distrib. in Australian and African subregions, and with corresponding spp. in N. hemisphere; MEISSNER (186).—C. Horn and neighbourhood, *Synallactes*, *Holothuria*, *Cucumaria*, *Thyone*, *Psolidium*, *Psolus*, *Caurlina*, *Trochodota*, *Chiridota*; PERRIER (212).—Magellan Str., *Chiridota* n. sp.; PERRIER (214).

B: GEOLOGICAL.

(i) GENERAL.

Evidence of *Echinoderma* for connection of Antilles with Mediterranean in Oligocene time contradicted by *Mollusca*, possible explanation; REID (225).—Strata of Pyrenees, Cambrian to Pleistocene, with lists of Echinoderms; ROUSSEL (234).—Brief systematic account of genera of *Cidaridae* and *Salenidae* with special reference to French fossils (86), ditto, *Diadematidae* (87); FRITEL.

(ii) CAINOZOIC.

- a. **General**:—Spp. of *Schizaster*, horizon correlated with mutations of apex; TORNQUIST (268).—Tertiary *Ech.* & *Crin.* Victoria, S. Australia, and Tasmania, list with locc.; DENNANT (58).
- b. **Pleistocene**:—Denmark, —Stone-age, *Psammechinus*; PETERSEN (215) p. 81: Yoldia clay, Esbjerg, *Psolus*, *Ophioglypha*; MADSEN (177) p. 530.—Cave-breccia, Gibraltar, *Strongylocentrotus*; ACLAND (2).—Nettuno, Italy, *Ech.*; MELI (187) p. xli.—Ischia, —Astian, Mt. Epomeo, *Fibularia*, *Brissopsis*, *Schizaster*, *Amphidetus* (p. 5), Saharian, volcanic agglomerate, Valle di Mezzavia, *Fibularia* (p. 8); BELLINI (23).—Raised beaches, G. of Suez, *Rhabdocidaris*, *Heterocentrotus*, *Echinometra*, *Echinus*, *Clypeaster*, *Tetrodiscus*, *Metalia*, *Fibularia*, *Brissus*; FOURTAU (83) p. 444.—Bore-hole in coral reef, Funafuti, *Cidaris*, *Ech.* radioles, and *Hol.* plates; HINDE (124) p. 329.
- c. **Pleiocene**:—*Ech.* in tuff near Nettuno; DE VESCOVI (61) p. 67: not this rock; MELI in Abstr.—Near Borgamanero, *Encrinus* [!] *Cidaris*, *Echinus*, *Echinocyamus*, *Schizaster*; PATRINI (208) p. 743.—Upper:—Suez Canal, *Temnopleurus*, *Laganum*; FOURTAU (83) p. 444. Purisima formation, California, *Astrodapsis*, *Scutella*; HAEHL (110) p. 24.—New Zealand, *Echinus*; LORIOU (162) p. 20.
- d. **Meiocene**:—Tagliacozzo, Italy, *Cidaris*; LUPI (168).—Upper:—Redonian, Rennes, *Echinocyamus*; DOLLFUS (65) p. 662.—(Or Middle), Pontilevian, —Haguineau (Maine-et-Loire) *Toxopneustes*, *Echinus*, *Psammechinus*, *Cidaris*, *Echinolampas*, *Echinocyamus*; COUFFON (46): near Saumur, list of *Ech.*; COUFFON (47) p. 218.—Middle, —Helvetian, —calcaire à moellons de l'Hérault, *Scutella*; LORIOU (162) p. 68: Suabia, Echinoderm fauna compared with other locc., *Sphaeraster*, *Astropecten*, *Antedon*, *Cidaris*, *Psammechinus*, *Stirechinus*, *Scutella*, *Amphiope*, *Fibularia*, *Hemiaster*, *Spatangus*, *Sphaerites*, *Echinolampas*, *Brisopsis* [sic], *Schizaster*, *Echinocardium*; SCHUETZE (251).—Lower, —Algeria, *Schizaster*; SAVORNIN (241) p. 146.—15 km. E. of

Dér el Beda, near Suez, *Scutella*, *Brissopsis*; BARRON (15) p. 607.—Burdigalian, near Chambéry, France, *Echinolampas*, *Spatangus*, *Psammochinus*; DOUXAMI (69).
Maryland, *Echinocardium*, *Scutella*, *Ophioderma* (?), horizons and locc.; CLARK (39).

e. **Oligocene**:—Vacant.

- f. **Eocene**:—Pyrenees, *Maretia*, *Macropneustes*, *Linthia*, *Schizaster*, *Trachyaster*, *Ditremaster*, *Holcopneustes*, *Prenaster*, *Cyclaster*, *Amblypygus*, *Oriolampas*, *Pygorhynchus*, *Echinolampas*, *Conoclypeus*, *Cidaris*, *Rhabdocidaris*, *Leiosoma*, *Micropsis*, *Epiaster*, *Euspatangus*, *Hemiaster*, *Coelopleurus*; GOURDON (102).—Bribir, Dalmatia, *Porocidaris*, *Micropsis*, *Leiopedina*, *Schizaster*, *Macropneustes*, *Trachypatagus*, *Euspatangus*; DAINELLI (49).—Upper,—near Termini-Imerese, Italy, *Cidaris*, *Porocidaris*; CHECCHIA (37).—Bartonian, Biarritz and Gaas, *Pentacr. didactylus*, *Porocidaris*; DOUVILLÉ (67).—Middle,—Ostrovica-bara in Dalmatia, *Porocidaris*, *Micropsis*, *Leiopedina*, *Schizaster*, *Macropneustes*, *Trachypatagus*, *Euspatangus*; DAINELLI (50).—(?Mid.) Garadimi and Tamaské in Sokoto, *Plesiolampas* & *Hemiaster* n. spp., inferences on p. 303; BATHER (18): *Plesiolampas* suggests Lower rather than Middle (p. 283) but on p. 253 “scheint der Schluss auf Mitteleozän allerdings durchaus berechtigt”; OPPENHEIM (201).—Nummulitic of Gschliefgraben and Traunsee, Austria, *Ech.*; FUGGER (92) p. 339, 345.—Paleocene Denmark, *Ananchytes*, *Bourguetier.*, *Goniaster*, derived from Danian; GRÖNWALL (109) p. 28–31, figg.: same with addition of *Ophiura*; GRÖNWALL (108) p. 428.
Near Adelaide, S. Austral., *Schizaster*, *Macropneustes*; BASEDOW (16).

(iii) MESOZOIC.

a. **General**:—Vacant.

- b. **Cretaceous**:—Yorkshire, lists of Echinoderms; STRANGWAYS (266).—Portugal, list of horizons with *Ech.*; MALLADA (181).

1. **Upper**:—*Hemiaster* various spp. discussed; LAMBERT (147).—Upper Chalk of England, Echinoderm fauna, special notes on spp. of *Micraster*, *Pseudodiadema*, *Cidaris*, *Holaster*; JUKES-BROWNE (137) p. 20, 455, 497 et passim.—*Echinothuria* and other Chalk *Ech.* as drift in Aller Vale gravel pit near Torquay, and in flints at Great Haldon, Devonshire; SALTER (240) p. 19 & figg.—*Podolia*, *Holaster*, *Cidaris*; RADKEVICH (222).—Stage IX, Isengebirge, *Phymosoma*, *Catopygus*, *Nucleolites*, *Caratomus* (p. 18), *Cardiaster* (p. 44), general list (p. 149); ZAHÁLKA (296).—Egypt,—principal locc. and fossils there found, names of *Ech.*; FOURTAU (82): *Nardoa*, *Anthenea*; LORIOU (162).—Madagascar, *Noettingia*; BOULE (30).—N. S. Wales, *Isocr.*; ETHERIDGE (74).
Danian,—Craniakalk, harbour of Copenhagen, *Bourguetier.*, *Pentacr.*, *Ophiura*, *Goniaster*; GRÖNWALL (108) p. 424.—*Cyathidium* evidence for a gulf-stream; HENNIG (115) p. 55.
Danian and Senonian, Scania, *Ech.* & *Crin.*; TÖRNEBOHM (267) p. 136, 143.—Denmark, common *Ech.*; USSING (275) p. 85.
Senonian,—Yorkshire, zones of *Micraster cortestudinarium* to *Actinocamax quadratus*, *Bourguetier.*, *Marsupites*, *Uintacr.*, *Ophiura*, *Cidaris*, *Salenia*, *Zeuglopleurus*, *Echinocorys*, *Micraster*, *Infulaster*, *Holaster*, *Cardiaster*; ROWE (235).—Near Ste-Mènehould, *Micraster*, *Epiaster*, *Cidaris*; COLLET (44) p. 80.—Pyrenees, *Micraster*, *Coraster*, *Echinocorys*, *Echinoconus*; GOURDON (102): *Micraster*, *Hemiaster*, *Pyrina*, *Clypeolampas*, *Salenia*, *Orthopsis*, *Cyphosoma*; ROUSSEL (232): *Pyrina*, *Hemiaster*, *Salenia*, *Clypeolampas*, *Orthopsis*, *Micraster*

- Cyphosoma*; ROUSSEL (233).—Near Poltawa, Russia, *Ananchytes*, *Cidaris*, *Holaster*; ARMASCHESKY (14) p. 84, 273.—N. Caucasus, *Ananchytes*; KARAKASH (138).—Nierenthaler Schichten of Gschliefgraben, Austria, *Ech.*; FUGGER (92) p. 339.
- Upper Senonian,—Aral Sea, *Cardiaster*, *Cyphosoma*, *Ananchytes*, *Cassidulus*; BERG (24).—Algeria, *Heterolampas*; SAVORNIN (241) p. 150.—Quadraten-Kreide, Lägerndorf, Holstein, *Isocr.* n. sp.; JAEKEL (133).—*Marsupites* zone near Croydon, England,—*Bourguetier*, *Uintacr.*, *Echinocorys*; DIBLEY (62): *Marsupites*, *Uintacr.*, *Echinoconus*; WRIGHT (294): *Cidaris*, *Cyphosoma*, *Echinocorys*, *Galerites*, *Micraster*, *Bourguetier*, *Marsupites*, *Uintacr.*; HINDE (125).—Nanaimo group (? = Niobrara), Vancouver Id. and Salt Spring Id., *Uintacr.* & *Hemiaster* n. sp.; WHITEAVES (285).
- Lower Senonian,—Querum bei Braunschweig, *Stereocidaris*; WOLLEMAN (289).—Saxony, *Cardiaster*, *Catopygus*; PETRASCHECK (216).—Silesia, *Cardiaster*; FLEGEL (79).—Priesener-Schichten, E. Bohemia, new locc., *Cidaris*, *Micraster*, *Holaster*, *Hemiaster*; JAHN (134).
- Senonian to Turonian,—near Croydon, Eng., *Ech.*, *Ast.*, *Crin.*; HOLMES (127).—Zones of *Holaster planus* and *Micraster cortestudinarium* in N. Lincolnshire, *Micraster*, *Infulaster*, *Holaster*, *Ananchytes*, *Cidaris*; BURNET (33).—Mungo Limest., Cameroons, *Cidaris*, *Hemiaster*?, and a *Galeritid* (p. 223), sandy shale of same age, indeterminate *Spatangids* (p. 234); SOLGER (258).—(Turonian?) Phosphatic Chalk, between Somme and Oise, *Ananchytes*; RABELLE (221).
- Turonian,—Yorkshire, zones of *T. gracilis* and *Holaster planus*, *Bourguetier*, *Pentacr.*, *Cidaris*, *Cyphosoma*, *Salenia*, *Echinocorys*, *Hemiaster*, *Holaster*; ROWE (235).—Near Ste-Ménéhould, *Discoidea*, *Glyphosoma*, *Cyphosoma*, *Cidaris*, *Peltastes*, *Goniaster*, *Bourguetier*, *Apocr.*, *Pentacr.*; COLLET (44) p. 77.
- Upper Turonian,—Dresden, *Holaster*, *Phymosoma*; PETRASCHECK (216).—Silesia, *Micraster*; FLEGEL (79).
- Turonian or Cenomanian, S. Patagonia, *Cardiaster*; WILCKENS (287).
- Cenomanian,—vallée de l'Oison, *Peltastes*; FORTIN (81).—St. Jouin, Normandy, list of *Ech.*; NIBELLE (197).—Near Brunswick, *Holaster*, *Pseudodiadema*, *Discoidea*; WOLLEMAN (290).—Bohemia, *Cidaris*, *Pentacr.*; JAHN (135).
- Upper Cenomanian,—near Ste-Ménéhould, *Holaster*, *Cidaris*; COLLET (44) p. 70.—Sinai, *Linthia*; NEWTON (196).
- Lower Cenomanian,—"Gaize," Ste-Ménéhould, *Hemiaster*, *Epiaster*, *Holaster*, COLLET (44) p. 44.
- Albian,—Algeria, *Epiaster*; SAVORNIN (241) p. 141.—N. Caucasus, *Pseudodiadema*; KARAKASH (138).
- 1 & 2. Cenomanian and Aptian, Switzerland, *Hemiaster*, *Heteraster*; SCHARDT (244).
2. Lower:—W. Swiss Jura, horizons and locc., lists of *Ech.*; BAUMBERGER (19).—Nauplia, Greece, remains of *Ech.*; CAYEUX (34) p. 96, 97.—Madagascar, *Epiaster*, *Peltastes*; DOUVILLÉ (68) p. 214.
- Aptian,—Upper Gault, Barnwell near Cambridge, *Cidaris*, *Pentacr.*; FEARNSIDES (76).
- Neocomian,—Isère, *Pentacr.* n. spp.; LORIOU (162).—Greensand, Whitehead near Belfast, *Ech.*; WELCH (282).—Baqremian, Bulgaria, *Peltastes*, *Echinobrissus*, *Cidaris*, *Pseudocidaris*, *Psammochinus*; ZLATARSKI (299).—Jorat, Bernese Jura, Hauterivian *Goniaster*, *Toxaster*, *Holaster* (p. 15), Berriasian *Toxaster*, *Phyllobrissus*; BAUMBERGER (20) p. 14.

- Comanche series, Washita group, Texas, *Diplopodia*, *Pyrina*, *Holcetypus*, *Epiaster*; RICHARDSON (227) p. 48.—Shafter beds, Shafter, Texas, *Toxaster*, *Diadema*, *Holcetypus*; UDDEN (273) p. 35, 37.—Honduras, *Enallaster*, *Epiaster*, *Diplopodia*, *Pseudosalenia*, *Cidaris*; LORIOU (162).
- c. **Jurassic**:—Yorkshire, lists of Echinoderms; STRANGWAYS (266).
1. Upper:—Madagascar, *Apiocr.*; DOUVILLÉ (68) p. 213.
 Portlandian (= Tithonian),—Aquitaine, *Hemicidaris*, *Echinobrissus*, *Acrosalenia*; GLANGEAUD (101) p. 57.—Solagna in Vicentine, *Metaporphinus*, *Collyrites*, *Hemicidaris*, *Phyllocr.*; DEL CAMPANA (55).
 Kimmeridgian, —near Macon, *Pseudodiadema*, *Pygurus*, *Collyrites*; LISSAJOUS (153).—Nattheim-Wettinger beds, remains of near Basle, *Cidaris*, *Pentacr.*, *Apiocr.*, *Hemicidaris*; ROLLIER (230).—Solenhofen Plattenkalk, list of *Ech.*, *Ast.*, *Oph.*, *Crin.*, *Saccocoma* n. sp.; WALTHER (291).
 Sequanian, —Upper, —Astartian near Macon, *Pseudodiadema*, *Glypticus*, *Stomechinus*; LISSAJOUS (153).
 - 1 & 2. Kimmeridgian and Oxfordian, Poland, *Apiocrinus*, *Pentacrinus*, *Sphaeraster*, *Cidaris*, *Rhabdocidaris*, *Stomechinus*, *Hyboclypeus*, *Echinobrissus*, *Collyrites*, *Dysaster*; SIEMIRADZKI (255).
 2. Middle:—Rauracian, Upware, Cambridgesh. *Desorella*; WOODS (293).—Lower Rauracian, Le Preslot, Hte-Saone, *Cidaris*, *Diplocidaris*, *Hemicidaris*, *Diplopodia*, *Pedina*, *Apiocr.*, *Millericr.*, *Eugeniocr.*, *Pentacr.*; MAIRE (178).—Oxfordian, Deux-Sèvres, *Dysaster*, *Stomechinus*, *Cidaris*; WELSCH (283).—Near Macon, —Rauracian, *Cidaris*, *Pseudodiadema*, *Diplopodia*, *Holcetypus*, *Collyrites*, *Dysaster*: Oxfordian, *Pseudodiadema*, *Diplopodia*, *Magnosia*, *Holcetypus*, *Echinobrissus*, *Collyrites*, *Dysaster*: Callovian, *Pseudodiadema*, *Diplopodia*, *Cidaropsis*, *Pedina*, *Holcetypus*, *Hyboclypeus*, *Echinobrissus*, *Pygurus*, *Collyrites*, *Dysaster*; LISSAJOUS (153).—Zone of *Parkinsonia parkinsoni* near Neuchatel, *Clypeus*, *Collyrites*; SCHARDT (243) p. 257.
 3. Lower:—Bathonian, Neuchatel, Vaud, and Ain, *Clypeus*, *Holcetypus*, *Collyrites*, *Acrosalenia*, *Pseudodiadema*; CLERC (42).—Bathonian and Vesulian near Neuchatel, *Pentacrinid* limestone 30 m. and 15 m.; SCHARDT (243) p. 304.—Hauptrogenstein, Liestal near Basle, *Isocr.*, *Ophiomusium*; LEUTHARDT (152).—Lower Bathonian?, Greenland, *Pentacr.* [i.e. *Isocr.*]; MADSEN (176).—Near Macon, —Bathonian, *Pseudodiadema*, *Hemipedina*, *Pedina*, *Echinobrissus*, *Pygurus*, *Collyrites*: Bajocian, *Pseudodiadema*, *Hemipedina*, *Magnosia*, *Pedina*, *Pseudopedina*, *Stomechinus*, *Holcetypus*, *Hyboclypeus*, *Galeropygus*, *Pyrina*, *Echinobrissus*, *Clypeus*, *Collyrites*; LISSAJOUS (153).—"Zone à *Lioceras concavum* du Mont d'Or Lyonnais," *Cidaris*, *Pentacr.*; RICHE (228).—Bajocian, Madagascar, *Stomechinus*; DOUVILLÉ (68) p. 215.
 - d. **Lias**:—near Estagel, France, *Crin.*; MENGEL (188) p. 266.
 Middle, or Pliensbachian (= Charmouthian):—Seeberg, Gotha *Cidaris*, *Pentacr.*, *Cotylederma*; SCHAEFER (242).—Bulgaria, *Pentacr.*; ZLATARSKI (299).—Zone of *Amm. costatus*, Freistadt in Moravia, *Pseudodiadema*, *Balanocr.*, *Pentacr.*; RZEHAČ (238) p. 148: *Balanocr.* (239).—Domerian, W. Lombardy, *Millericr.*, *Pentacr.*, *Cidaris*; MARIANI (183) p. 153, 154.
 Lower, or Sinemurian:—Seeberg, Gotha, *Asterias*, *Pentacr.*; SCHAEFER (242).—Mt. Campo dei Fiori, Lombardy, *Pentacr.*; MARIANI (183) p. 138.
 Rhaetic:—Redland, Bristol, *Cidaris*, *Pentacr.*; SHORT (254).—Hettangian, —of Vendée, n. spp. of *Acrosalenia*, *Pseudodiadema*, *Hessotiara*, *Palaeopedina*, in coll. Chartron; LAMBERT (148): near Macon, *Diademopsis*; LISSAJOUS (153).

- e. **Trias**:—Bulgaria, *Encrinus*; ZLATARSKI (299).
 Upper,—Bear Id., Arctic, *Pentacr.*, *Ophioderma*, *Cidaris*; BOEHM (28).—Of Kosticia, Montenegro, *Encrinus*; DEL CAMPANA (56).—Arlbergsschichten near Bludenz, *Encrinus*; FIEDLER (77).
 Middle,—Supposed Lias of Theben-Neudorf, Austria, *Encrinus*; TOULA (269).—Upper Muschelkalk, Seeberg, Gotha, *Cidaris*, *Encrinus*; LANGENHAN (150).—Ditto and Ladinian near Sarajevo, *Encr.*, *Cidaris* (p. 576, 579, 645, 703), Lower, *Dadocr.* (p. 539); KITTL (141).

(iv) PALAEOZOIC.

- a. **General**:—Lower Palaeozoic *Crin.* Australia, historical summary; ETHERIDGE (75).
 b. **Permian**:—Cibolo limest., Shafter, Texas, *Archaeocidaris*, & *Crin.* UDDEN (273) p. 20–22, large *Crin.* columnals fig. 4.
 c. **Permo-Carboniferous**:—Irwin R., W. Australia, columnals of (?) *Actinocrinidae*; CHAPMAN (36) p. 323.
 d. **Upper Carboniferous**:—Sumatra, *Poteriocr.* and *Crin.* indett.; VOLZ (280) p. 108.—Lower Coal Measures, Kansas, various horizons and locc., *Archaeocidaris* (p. 464, 467, 470, 472), *Erisocr.* (p. 467); BEEDE & ROGERS (21).
 e. **Lower Carboniferous**:—Dumfries, *Palaechinus*, *Archaeocidaris*, *Poteriocr.*, *Hydreionocr.*, *Forbesocr.*; PEACH (209).—Near Sarajevo, *Poteriocr.*? at Prača (p. 666, 681), *Bellerophon* beds, *Archaeocidaris*, *Eocidaris*? (p. 684); KITTL (141).—Yoredale beds, Yorkshire, *Archaeocidaris* (p. 186, 188), Carbonif. Limest., Newbrough, *Archaeocidaris*, *Poteriocr.* (p. 192); HIND (123).—Visean, Culm, near Giessen, *Archaeocidaris* n. sp.; PARKINSON (206).—Lower Visean, Vla Belgium, —Denée (Namur) *Scaphiocr.*, *Taeniaster*, *Palaechinus*, *Rhoechinus*, *Oligoporus*, *Archaeocidaris*; FRAIPONT (85): Pair (Clavier), *Platyocr.*; DESTINEZ (59) p. M 145.
 St Louis Limest., Iowa, *Pentremites*, *Archaeocidaris*; UDDEN (272) p. 380, 390.—Indiana, —Warsaw Limest., *Batocr.* n. spp. (103), *Batocr.*, *Tricoelocr.*, *Pentremites* (105), Keokuk Limest., *Actinocr.* n. var. (105); ROWLEY in GREENE.—Hueco formation, Texas, *Archaeocidaris*; RICHARDSON (227) p. 37.
 f. **Devonian**:—Upper,—Psammites du Condroz, Belgium, list of Echinoderms with locc.; DESTINEZ (60).—? Lower,—Epphaves, Cornwall, *Ophiurina*?; BATHER in FOX (84) p. 752.—Lower,—Siegener Schichten, Westerwald, *Crin.* cf. *Poteriocr. patulus*; DREVERMANN (71) p. 281.
 N. Amer. esp. Michigan, n. spp. of *Tripleurocr.* n. g., *Megistocr.*, *Tylocr.* n. g., & *Dolatocr.*, also spp. of *Stereocr.*, *Gennaeocr.*, *Gilbertsocr.*, *Vasocr.*, *Taxocr.*, *Arthracantha*; WOOD (291).—Thunder Bay series, Michigan, *Dolatocr.*, *Megistocr.*, *Codaster*, *Pentremites*, *Nucleocr.*; GRABAU (102 A) p. 193–196.—Ontario Co., N. Y., lists of *Crin.* and *Blast.* from all horizons; CLARKE & LUTHER (40).—Upper,—Tully Limest. W. New York, *Pentremites*; LOOMIS (161) p. 907. Hamilton Group, Indiana, *Megistocr.*, *Stereocr.*, *Gennaeocr.* n. sp. & *Botryocr.* n. sp., first occurrence of last genus in America [but see BATHER *Crin.* Gotland, p. 103] (104), ditto Clark co., *Nucleocr.* (105); Upper Helderberg, Falls of Ohio, *Arachnocr.*, *Megistocr.* (104), ditto, *Dolatocr.* (105); ROWLEY in GREENE.—Lower Devonian, U. S. A., *Anomalocystis*, *Lepadocr.*, *Cumaroocr.*; SCHUCHERT (249).
 g. **Silurian**:—source of R. d'Os, Pyrenees, *Scyphocr.*; ROUSSEL (233) p. 16.

Upper,—Ekwan R., N. E. Canada, *Crin.* columnals; DOWLING (70) p. 17, 39.—Upper,—N. Amer., *Apiocystis*, *Lepadocr.*, *Hallicystis*, *Tetracystis* n. g., *Jaekelocystis*, *Pseudocr.*, *Trimerocystis* n. g., *Callocystis*, *Coelocystis*, *Sphaerocystis*, *Cameroocr.*; SCHUCHERT (249).—Missouri,—Lower Helderberg, Delthyris Limest., *Stribalocystis*? *Troostocr.*?, and *Melocr.* n. sp.: Clinton group, n. spp. of *Calceocr.*, *Glyptocr.*, *Gissocr.*? and *Lampteroocr.*?: Niagaran, *Pisocr.*, *Cyathocr.*?, *Lecanocr.*, *Cordyloocr.*?, all n. spp., and *Stribalocystis*; ROWLEY (236).—Osgood and Laurel Limestones, various locc. Indiana, *Crin.*, *Cyst.*; FOERSTE (80) p. 341, 342.

Yass, N. S. W., *Pisocr.* n. sp.; ETHERIDGE (75).

h. Ordovician:—Upper,—Chasmops Lst., Kinnekulle, *Echinospaera* (p. 56).—Middle,—Orthoceras Lst., *ibid.*, *Sphaeronis* (p. 47); HOLM (126).—D₂ near Prag, *Lobolithus*? FRIČ (88).

Trenton Limestone, Ottawa, *Stenaster*, *Agelacr.*, *Glyptocr.*, *Rhodocr.*, *Archaeocr.*, *Periglyptocr.*, *Dendroocr.*, *Cleioocr.*, *Heterocr.*, *Lichenocr.*, *Iocr.* (pp. 61–69), Black River Formation, *ibid.*, *Glyptocr.* (p. 71); AMI (7).—Chazy Formation, Ottawa River, *Malocystis*, *Glyptocystis*, *Palaeocystis*, *Bolboporites*; AMI (8) p. 140.

IV. SYSTEMATIC†.

(A.)—ECHINODERMA IN GENERAL.

Echinoderma thus classified: Sub-phylum *Eleutherozoa*, with Classes 1. *Asteridia*, 2. *Ophiuridia*, 3. *Echinidia*, 4. *Holothuridia*; Sub-phylum *Pelmatozoa*, with Classes 1. *Crinoidia*, 2. *Blastoidia*, 3. *Cystoidia*; DELAGE (54).—Recent Echinoderms divided into “1. *Holothurien* (a) *Aspidochiroten* (b) *Dentochiroten*; 2. *Crinoiden*; 3. *Echiniden*; 4. *Anthodiaten* (a) *Asteriden* (b) *Ophiuren*”; HALLER (111A).

(B.)—HOLOTHURIOIDEA.

Holothuridia divided into Orders 1. *Actinopodida* with Suborders *Dentochirot-*, *Aspidochirot-*, and *Molpad-idae*, 2. *Paractinopodida*; DELAGE (54).

Acanthotrochus; DELAGE (54) p. 338, fig.

Achlyonice; DELAGE (54) p. 329.

Actinocucumis; DELAGE (54) p. 320, fig.

Actinopodida defined; DELAGE (54) p. 318.

Allantis; DELAGE (54) p. 324, fig.

Amphigynas; DELAGE (54) p. 327.

Ananus; DELAGE (54) p. 323.

Anapta; DELAGE (54) p. 337.

Ankyroderma; DELAGE (54) p. 332, figg. *A. musculus*; LO BIANCO (154) p. 61, pl. xl.

† A dagger prefixed to the name of a species indicates that it is fossil; prefixed to the name of the author, it denotes that the reference is to the species in a fossil state; prefixed to the name of a genus, it indicates that all species in the same paragraph are fossil, and the † is therefore not repeated before each name. The abbreviations *l. c.* and *op. cit.* refer only to the place or work quoted immediately before. *Ibid.* refers only to locality or, in the case of fossils, to horizon and locality.

A name and reference quoted without further statement [e.g. *Ankyroderma musculus*; LO BIANCO (154) p. 61] indicate that the quoted author's statement refers to a question of no systematic importance. Further information can usually be gleaned from the cross-references under TITLES.

- †*Annulina*; DELAGE (54) p. 337.
Apodogaster; DELAGE (54) p. 328.
Aspidochirotidae defined as Suborder (p. 319), with Fam. *Holothuri-*,
Synallact-, *Elasipod-*, & *Pelagothuri-inae* (p. 322); DELAGE (54).
Bathyherpystikes; DELAGE (54) p. 323.
Bathyplores; DELAGE (54) p. 323.
Benthodytes; DELAGE (54) p. 328.
Benthogone; DELAGE (54) p. 326.
Benthothuria; DELAGE (54) p. 323.
Capheira; DELAGE (54) p. 327, figg.
Caudina; DELAGE (54) p. 331, figg. *C. arenata*; WEYSSE (284) p. 104,
 fig.: descr., range; CLARK (38) p. 569, pls. xi, xiii. *C. pigmentosa*,
 Tierra del Fuego, & *C. rugosa*, Picton Id., n. spp.; PERRIER (212) p. 16.
Chiridota; DELAGE (54) p. 337, figg. *C. contorta*; LUDWIG (164) p. 690:
 PERRIER (212) p. 17. *C. marenzelleri* n. sp., Magellan Str.; PERRIER
 (214). *C. pisanii*; PERRIER (212) p. 17. *C. rotifera*; LUDWIG (164)
 p. 690.
Chiridotinae, Sub-fam.; DELAGE (54) p. 337.
Colochirus; DELAGE (54) p. 319: doubted, vide *Cucumaria*; PERRIER
 (213) p. 370. *C. montagui*; MALARD (179) p. 195.
Cucumaria, descr.; DELAGE (54) p. 319, figg. *C. brunnea*; MAR. BIOL.
 ASS. (184) p. 206. *C. convergens*, vide sub *Psolidium*. *C. crocea*
 (p. 687), *C. curata* (p. 688); LUDWIG (164). *C. filholi*, perhaps only
 var. of *C. alba*; PERRIER (213) p. 367. *C. frondosa*; DEKHUYZEN
 (51): growth stages; MICHAÏLOVSKIJ (192) p. 159: descr., range,
 that recorded from Florida reef probably *C. japonica*; CLARK (38)
 p. 566, pls. xi, xii. *C. glacialis*; LUDWIG (164) p. 688: MICHAÏLOVSKIJ
 (192) p. 159. *C. hyndmani*; MAR. BIOL. ASS. (184) p. 206. *C.*
laevigata; LUDWIG (164) p. 688: PERRIER (212) p. 14. *C. lefevrei*;
 PACE (205). *C. leonina*, sclerites; PERRIER (212) p. 14. *C. montagui*
 Flem. non Norman; PACE (205). *C. normani* n. sp., Plymouth,
 10 fm., incl. '*Holothuria pentactes* var.' Montagu 1808 & '*C. montagui*'
 Norm. 1893, specimen A.; PACE (205) p. 309: MAR. BIOL. ASS. (184)
 p. 206. *C. ocnoides* redescri.; PERRIER (213). *C. parva*; LUDWIG
 (164) p. 688: PERRIER (212) p. 14. *C. pentactes*; WOODCOCK (292):
 Linné's sp. indeterminable, name rejected; PACE (205). *C. planici*;
 WOODCOCK (292): NOBRE (199). *C. pulcherrima*, descr., range;
 CLARK (38) p. 567, pls. xi, xii. *C. saxicola*, MAR. BIOL. ASS. (184)
 p. 206: incl. '*C. montagui*' Norm. 1893, specimens B, C; PACE
 (205). *C. tabulifera* n. sp., Franklin B., Punta Arenas; PERRIER
 (212) p. 14.
Deima described; DELAGE (54) p. 324, figg.
Deimatinae, Subfam.; DELAGE (54) p. 325.
Dendrochirotidae defined as Suborder, with Fam. *Dendrochirot-* &
Rhopalodin-inae; DELAGE (54) p. 319.
Dendrochirotinae, defined with list of genera; DELAGE (54) p. 319.
Elasipodinae defined with list of genera; DELAGE (54) p. 324.
Elpidia; DELAGE (54) p. 328. *E. glacialis*, minor variations; MICHAÏLOVSKIJ
 (192) p. 158, 184.
Elpidiidae, Subfam.; DELAGE (54) p. 328.
Enypniastes; DELAGE (54) p. 329.
Euphronides; DELAGE (54) p. 328, figg.
Eupyrgus; DELAGE (54) p. 331. *E. scaber*; MICHAÏLOVSKIJ (192) p. 161.
Gastrothuria; DELAGE (54) p. 323.
Haplodactyla; DELAGE (54) p. 331, fig.
†*Hemisphaerantus*; DELAGE (54) p. 337.
Holothuria descr.; DELAGE (54) p. 322. *Holothuria* [sic] sp.; NOBRE
 (198) p. 56. *H. atra*; GARDINER (95) p. 339. *H. forskali*; WOOD-

- COCK (192). *H. maculata*; GARDINER (95) p. 339, 392. *H. nigra*; MAR. BIOL. ASS. (184) p. 207; ROY. COLL. SURGEONS (237) p. 5. *H. (?) patagonica* n. sp., Santa Cruz, Patagonia; PERRIER (212) p. 13. *H. poli*; POLARA (220). *H. tubulosa*; I. c.: CLERC (41): HENRI (116) p. 17-20; LANZI (151).
- Holothurinae* defined with list of genera; DELAGE (54) p. 322.
- Ilydaemon*; DELAGE (54) p. 326, figg.
- Irpa*; DELAGE (54) p. 328.
- Kolga*; DELAGE (54) p. 329, figg.
- Labidodemas*; DELAGE (54) p. 322.
- Labidoplax*; DELAGE (54) p. 337.
- Laetmogone*; DELAGE (54) p. 326, figg.
- Laetmophasma*; DELAGE (54) p. 326.
- Ludwigia* Reiffen; DELAGE (54) p. 320: rejected; PERRIER (213) p. 370.
- Meseres*; DELAGE (54) p. 323.
- Mesothuria*; DELAGE (54) p. 324. *M. interstitialis*; KIAER (140).
- Molpadia* descr.; DELAGE (54) p. 331.
- Molpadiidae* defined as Suborder; DELAGE (54) p. 319.
- Muelleria*; DELAGE (54) p. 323. *M. lecanora*; DOFLEIN (64) p. 126.
- Myriotrochinae*, Subfam.; DELAGE (54) p. 337.
- Myriotrochus*; op. cit. p. 338, figg. *M. rinkii*; MICHAÏLOVSKIJ (192) p. 162.
- Oneirophanta*; DELAGE (54) p. 325, figg.
- Orcula*; DELAGE (54) p. 320.
- Orphnurgus*; DELAGE (54) p. 326.
- Paelopatides*; DELAGE (54) p. 323.
- Pannychia*; DELAGE (54) p. 326.
- Parepidia*; DELAGE (54) p. 328.
- Paroriza*; DELAGE (54) p. 323.
- Pelagothuria* descr.; DELAGE (54) p. 329, figg.
- Pelagothurinae* defined with list of genera; DELAGE (54) p. 329.
- Peniagone* descr.; DELAGE (54) p. 328.
- Pentadactyla*; DELAGE (54) p. 322.
- Phyllophorus*; DELAGE (54) p. 320, fig. *P. drummondi*; MALARD (179) p. 195; MICHAÏLOVSKIJ (192) p. 160; ÖSTERGREN (203). *P. urna*; LUDWIG (164) p. 689.
- †*Priscopedatus*; DELAGE (54) p. 323.
- Protankyra*; DELAGE (54) p. 337.
- Pseudocucumis*; DELAGE (54) p. 320. *P. mixta*, ÖSTERGREN (203).
- Pseudopsolus*; DELAGE (54) p. 321.
- Pseudostichopus*; DELAGE (54) p. 324.
- Psolidium*; DELAGE (54) p. 320. *P. convergens* (Herouard sub *Cucumaria*); *P. dorsipes*; PERRIER (212) p. 15. *P. nutriens*; LUDWIG (164) p. 689.
- Psolus*; DELAGE (54) p. 320. *P. antarcticus*; LUDWIG (164) p. 689: distinct from *P. squamatus*; PERRIER (212) p. 15. *P. ephippifer*; LUDWIG (164) p. 689. *P. fabricii*; †MADSEN (177) p. 530; MICHAÏLOVSKIJ (192) p. 160. *P. phantapus*; I. c. *P. squamatus* var.; PERRIER (212) p. 15. *P. valvatus* n. sp., Trondhjem fjord, 40-100 m.; ÖSTERGREN (203).
- Psycheotrepes*; DELAGE (54) p. 328.
- Psychropotes* descr.; DELAGE (54) p. 327, fig.
- Psychropotidae* Subfam.; DELAGE (54) p. 327.
- Rhabdomolgus*, probably young *Synapta*; DELAGE (54) p. 337.
- Rhipidothuria*; DELAGE (54) p. 328.
- Rhopalodina* descr.; DELAGE (54) p. 321.
- Rhopalodiniinae*, defined with list of genera; DELAGE (54) p. 321.
- Scotoanassa*; DELAGE (54) p. 329, figg.
- Scotodeima*; DELAGE (54) p. 326.
- Scotoplanes*; DELAGE (54) p. 328, fig.

- Semperia drumondi* Herouard ; PACE (205).
Stichopus ; DELAGE (54) p. 322, figg. *S. chloronotus* ; GARDINER (95) p. 339.
S. regalis ; BERTRAND (27) : DUBOIS (72) : HENRI (116) p. 19. *S. tremulus* ; KIAER (140).
Synallactes descr. ; DELAGE (54) p. 323. *S. moseleyi*, not a *Bathyplores* ; PERRIER (212) p. 13.
Synallactinae, defined with list of genera ; DELAGE (54) p. 323.
Synapta descr. ; DELAGE (54) p. 332, figg. : auricularia ; LO BIANCO (154) p. 55, pl. xxxiv. *S. digitata* ; MAR. BIOL. ASS. (184) p. 206. *S. inhaerens* ; l. c. : MALARD (180) : descr., range ; CLARK (38) p. 571, pls. xi, xiv. *S. cf. ooplax* ; GARDINER (95) p. 338. *S. roseola*, descr., range ; CLARK (38) p. 571, pls. xi, xiv. *S. vivipara* ; LUDWIG (164) p. 689.
Synaptinae Subfam. ; DELAGE (54) p. 337.
Theelia ; DELAGE (54) p. 320.
Thyone ; DELAGE (54) p. 320, figg. *T. briareus*, descr., range, habits ; CLARK (38) p. 567, pls. xi, xiii. *T. fusus* ; MALARD (179) p. 195 : MAR. BIOL. ASS. (184) p. 206. *T. lechleri*, sclerites ; PERRIER (212) p. 15. *T. raphanus* ; MALARD (179) p. 195. *T. rubra* ; LUDWIG (164) p. 689. *T. scabra*, descr., range ; CLARK (38) p. 568, pls. xi, xiii. *T. spectabilis*, calcareous ring ; PERRIER (212) p. 15. *T. unisemita*, descr., range ; CLARK (38) p. 569, pls. xi, xii.
Thionepsolus [sic. err. pro *Thyonepsolus*] ; DELAGE (54) p. 320.
Trochoderma ; DELAGE (54) p. 337. *T. elegans* ; MICHAÏLOVSKIJ (191).
Trochodota ; DELAGE (54) p. 337. *T. purpurea* ; PERRIER (212) p. 17.
Trochostoma ; DELAGE (54) p. 332, fig. *T. boreale* ; MICHAÏLOVSKIJ (192) p. 161. *T. oëliticum*, incl. *T. boreale* but not *T. arcticum* or *T. turgidum*, descr., range ; CLARK (38) p. 570, pls. xi, xiii.
Ypsilothuria ; DELAGE (54) p. 321.

(C).—ECHINOIDEA.

Classification of *Ech.*, phylogenetic, causes of change ; DOUVILLÉ (66) p. 72. *Echinidia* divided into Subclass 1. *Regulariae* with Orders *Palechinida*, *Echinothurida*, *Cidarida*, & *Diademida*, 2. *Irregulariae* with Orders *Holactypida*, *Clypeastrida*, & *Spatangida* ; DELAGE (54). Diagnoses of Orders, Families, and Genera, with lists of spp. and distrib., continuing *Regularia* from *Temnopleuridae*, and all *Irregularia* ; MEISSNER in HAMANN (112) [for scheme of classification down to Sub-famm. see Introduction to last year's Record, p. 6]. *Echinoidea Regularia*, classifications of Pomel, Duncan, Lambert, Gregory, and Bell discussed, following proposed : Order I *Entobranchiata*, with one Suborder, *Cidaroida*, Famm. *Archaeocidaridae* & *Cidaridae* ; Order II, *Ectobranchiata* with Suborders 1, *Streptosomata*, Famm. *Lepidocentridae*, *Echinothuridae*, 2, *Stereosomata*, Tribus i *Diademina*, Famm. *Aspidodiademata*, *Diademata*, *Pseudodiademata*, *Micropyg*-, *Pedin*-, *Hemicidaridae*, Tribus ii *Salenina*, Fam. *Salenidae*, Tribus iii, *Phymosomina*, Famm. *Arbaci*-, *Phymosomat*-, ? *Stomechinidae*, Tribus iv, *Echinina*, Famm. *Stomopneust*-, *Temnopleur*-, *Echin*-, *Toxopneust*-, *Echinometridae* ; MORTENSEN (195) p. 47 [for smaller divisions see under Fam. names ; N.B. that Mortensen's Tribus are Superfamilies, whereas Lambert's are Sub-subfamilies]. Palaeozoic *Ech.* classified and revised, see further sub *Palaeoechinoidea* ; KLEEM (142). Key to spp. of *Ech.* in East Indian Archipelago, see list III, A, iii ; DE MEIJERE (57) p. 220-237.

Taxonomic value of the following characters :—Pedicellariae, Mortensen's classification discussed by DE MEIJERE (57) p. 248, ridiculed by

- AGASSIZ (3) passim. Crenulation of tubercles, slight value; DE MEIJERE (57) p. 24. Radioles, in *Clypeastroida*; op. cit. p. 104. Fascioles, not safe; BATHER (18) p. 298: doubtful; DE MEIJERE (57) p. 165, 241: Subanal, in Spatangoids; AGASSIZ (3) p. 179.
- Abatus cavernosus*, specimen 1.6 mm. long descr.; AGASSIZ (3) p. 211, pl. xcix.
- Acanthocardis*; DELAGE (54) p. 227.
- Aceste* diagnosis; MEISSNER in HAMANN (112) p. 1393: descr.; DELAGE (54) p. 271, fig. *A. bellidifera*, radioles; DE MEIJERE (57) p. 196, pl. xxiii.
- †*Acrocidaris granulosa*, not this genus; LAMBERT in Review of LISSAJOUS (153).
- †*Acrosalenia*; DELAGE (54) p. 231. *A. chartroni* n. sp., Hettangian of Vendée; LAMBERT (148) p. 538, pl. xviii. *A. decorata*; STRANGWAYS (266) p. 40, 49. *A. koenighi* [sic]; GLANGEAUD (101) p. 33. *A. spinosa*; CLERC (42) p. 99: apical system, ambulacra; AGASSIZ (3) p. 37, 41, & fig.
- Aërope*; DELAGE (54) p. 272: diagnosis; MEISSNER in HAMANN (112) p. 1393: retained among *Brissina*, but with ananchytid affinities; AGASSIZ (3) p. 197. *A. fulva* descr. and compared with *A. rostrata*; op. cit. p. 194, pls. lv, lxi, lxii: radioles, pedicellariae; DE MEIJERE (57) p. 195, pl. xxiii.
- Aëropidae* discussed; DE MEIJERE (57) p. 243.
- Agassizia*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1392: apical system (p. 173, f. 287, pl. cviii), *A. excentrica* compared with *Spatagoderma* (p. 198, figg., pl. cviii); AGASSIZ (3).
- Alexandria* discussed; DE MEIJERE (57) p. 136: diagnosis; MEISSNER in HAMANN (112) p. 1383.
- Amblypneustes*; DELAGE (54) p. 241: distinguished from *Microcyphus* & *Holopneustes* (p. 102), *A. formosus*, pedicellariae, radioles, &c. (p. 103, pl. ii, vi, vii); MORTENSEN (195). *A. griseus*; op. cit. p. 105: great variation, probably incl. *A. formosus*, *pallidus*, & *ovum*; HALL (111) p. 72. *A. grossularia*, holotype examined, pedicellariae &c. (p. 105, pl. vi, vii), *A. ovum*, pedicellariae &c., distinguished from *A. formosus* and from various spp. wrongly referred here by Bell, Ramsay, et al. (p. 103, pl. vii); MORTENSEN (195): vide etiam sub *Microcyphus zigzag*. *A. pallidus*? pedicellariae, radioles, &c. (p. 104, pl. ii, vi, vii). *A. vegae*, syn. of *Mespilia globulus* (p. 106); op. cit.
- †*Amblypygus dilatatus*; GOURDON (102) p. 221.
- Amphidetus cordatus*; †BELLINI (23) p. 5: KIAER (140): MALARD (179) p. 194.
- †*Amphiope*:—*A.* sp. ind. fragments (p. 175, pl. iv), *A. bioculata*, specimen figd. Quenstedt, 1875, descr. incl. *A. bisperforata* Parkinson non Leske, distrib. (p. 173); SCHUETZE (251).
- Amphipneustes*; DELAGE (54) p. 273: discussed; AGASSIZ (3) p. 178: DE MEIJERE (57) p. 240: diagnosis; MEISSNER in HAMANN (112) p. 1388.
- †*Ananchites* (vel *Ananchytes*), vide *Echinocorys*.
- Ananchytinae*; DELAGE (54) p. 266.
- Anochanus* diagnosis; MEISSNER in HAMANN (112) p. 1386. *A. sinensis*; LUDWIG (164) p. 691.
- Anomalanthus* diagnosis; MEISSNER in HAMANN (112) p. 1382.
- Anthechinus roseus*; MORTENSEN (195) p. 98.
- Anthocardis*; DELAGE (54) p. 245: diagnosis; MEISSNER in HAMANN (112) p. 1374.
- Aphanopora*; DELAGE (54) p. 264: diagnosis; MEISSNER in HAMANN (112) p. 1386: ditto, & *A. echinobrissoides* descr.; DE MEIJERE (57) p. 142, pls. vi, xix.
- †*Aploidiadema* validity questioned; LISSAJOUS (153) p. 114.

†*Arachniopleurus*; MORTENSEN (195) p. 112.

Arachnoides diagnosis; MEISSNER in HAMANN (112) p. 1382: name rejected, should be *Echinodiscus*; FOURTAU (83) p. 424. *A. placenta*; DE MEIJERE (57) p. 137, pl. xix: MARTENS (185).

Araeosoma descr.; DELAGE (54) p. 223, fig.: criticised; AGASSIZ (3) p. 83. *A. owstoni* (corr. *owstoni*) n. sp., Sagami B., 50 fm.; MORTENSEN (194) p. 82, pl. ii, v. *A. tessellatum*, radioles, pedicellariae, spicules; DE MEIJERE (57) p. 35, 250, pl. xiii: ? juv. = *Asthenosoma gracile* A. Ag. Challenger Stat. 219; MORTENSEN (194) p. 86, pl. iv.

Arbacia; DELAGE (54) p. 237: versus *Echinocidaris*, discussed; LORIOI (162) p. 13: development of coronal plates; AGASSIZ (3) p. 54, pls. liii, liv: experiments on sperm-ovum; LYON (171). *A. dufresnii*, incl. *A. schytei* & *A. alternans*, descr., with young; LORIOI (162) p. 8, pl. ii. *A. nigra*; DE MEIJERE (57) p. 207. *A. punctata*, pluteus; WEYSSE (284) p. 100, fig. *A. punctulata*, descr., range; CLARK (38) p. 563, pl. vii. *A. pustulosa*; DI MAURO (63). *A.* [*? pustulosa* ?]; JANSSENS (136).

Arbaciinae defined with list of genera; DELAGE (54) p. 237.

Arbacia diagnosis; MEISSNER in HAMANN (112) p. 1367. *L. forbesiana* referred to *Prionechinus* (q. v.); DE MEIJERE (57) p. 71.

†*Archaeocidaridae* defined; KLEM (142) p. 45.

†*Archaeocidaris*; DELAGE (54) p. 218: defined, synn. *Echinocrinus*, *Palaeocidaris*; KLEM (142) p. 45. *A.* sp.; BEEDE & ROGERS (21): HIND (123) pp. 186, 188: ?; KITTL (141) p. 685, pl. xxii: Etheridge 1892, Julien 1896, Meek 1859, & Stacke 1877; KLEM (142) p. 65. *A. aculeatus* (p. 45), *A. agassizi* (p. 46), & *A. biangulatus* (p. 47) descr.; KLEM (142). *A.* cf. *biangulata*; RICHARDSON (227) p. 37. *A. cratis* (p. 47), *A. dininni*, & *A. edgarensis* (p. 48) descr., *A. glabrispina* (p. 62), *A. gracilis* descr. (p. 49), *A. grueneri* (p. 62); KLEM (142). *A. harteiana* vide *Perischodorus hartei*. *A. illinoisensis* (p. 49) & *A. keokuk* (p. 50) descr.; KLEM (142). *A. keyserlingi*, radioles; KITTL (141) p. 684. *A. konincki*; KLEM (142) p. 63. *A. ladina*; l. c.: radioles; KITTL (141) p. 684. *A. legrandensis* (p. 50), *A. longispinus*, *A. megastylus* (p. 51), *A. mucronatus* (52), *A. neri* [sic], incl. *Cidaris protei* (p. 52), *A. newberryi* (p. 53), *A. norwoodi*, *A. ornatus* (p. 54), all descr., *A. ourayensis*, *A. priscus* (p. 63); KLEM (142). *A. regimontana* n. sp., Visean of Königsberg near Giessen, interambulacra; PARKINSON (206) p. 365, pl. xv. *A. rossicus* descr. (p. 55), var. *schellwieni*, *A. scotica* Smith [l, i.e. J. Young], *A.* (?) *selwyni* (p. 64), *A. shumardanus* descr. (p. 56), *A. spinoclavatus* descr. (p. 57), *A. tennesseae*, *A. tirolensis* (p. 64), *A. trautscholdi* (p. 65), *A. triplex* descr. (p. 57), *A. triserialis* & *A. triseratus* descr. (p. 58), *A. tudifer* descr. (p. 59); KLEM (142). *A. urei*; FRAIPONT (85) p. 11, pl. i: HIND (123) p. 192: PEACH (209) p. 848: descr.; KLEM (142) p. 59. *A. vetustus* descr.; KLEM (142) p. 61. *A. wervekei*; FRAIPONT (85) p. 11, pl. i: KLEM (142) p. 65. *A. wortheni* descr.; KLEM (142) p. 61.

Archaeocidarisinae defined with list of genera; DELAGE (54) p. 218.

Archaeopneustes, genotype *A. hystrix* is syn. of *Paleopneustes*, but [*A. abruptus*] is more allied to *Amphipneustes*; AGASSIZ (3) p. 186.

Argopatagus, diagnosis; MEISSNER in HAMANN (112) p. 1401: & *Geniopatagus* compared with *Palaeotropus*, *Homolampus*, *Phrissocystis*, & *Palaeobrissus* (p. 172), *A. vitreus* (p. 172, 183, pl. xci); AGASSIZ (3).

Aspidodiadema; DELAGE (54) p. 230, fig. *A. antillarum*, tubercles, pedicellariae, referred to *Dermatodiadema* (q. v.) = *Plesiadiadema* (p. 37, pl. iii-v), *C. jacobyi*, spicules, pedicellariae, *A. microtuberculatum*, specimen fr. Challenger Stat. 134 taken as genotype, tubercles, pedicellariae, referred to *Dermatodiadema* (q. v.) = *Plesiadiadema* (p. 36, pl. iii-v); MORTENSEN (195). *A. nicobaricum*, descr.; DE MEIJERE

- (57) p. 44, pls. iii, xiii: pedicellariae; MORTENSEN (195) p. 36. *A. tonsum*, pedicellariae, distrib.; op. cit. p. 34, pl. iii, v: radioles, pedicellariae, spicules; DE MEIJERE (57) p. 44, pl. xiii.
- Aspidodiademataidae* accepted; MORTENSEN (195) p. 43.
- Aspidodiademina* defined with list of genera; DELAGE (54) p. 230.
- Asterostoma* discussed; DE MEIJERE (57) p. 242.
- Asthenosoma* descr.; DELAGE (54) p. 222, figg. *A. coriaceum*, abactinal area; AGASSIZ (3) p. 115, pl. lii. *A. gracile*, vide sub *Calveria* et *Araeosoma tessellatum*. *A. grubei* compared with *A. varium*; DE MEIJERE (57) p. 33, pl. xii. *A. heteractis* (p. 88), *A. ijimai*, madreporite, pedicellariae, spicules, radioles (p. 87, pl. iii, v); MORTENSEN (194). *A. longispinum* vide *Calveria gracilis*. *A. pellucidum* juv. descr.; AGASSIZ (3) p. 113, pl. li. *A. varium*; MARTENS (185) p. 132. *A.* (err. pro *Phormosoma*) *zealandiae* (q. v.); AGASSIZ (3) p. 76.
- Astriclypeus* diagnosis; MEISSNER in HAMANN (112) p. 1384.
- †*Astroclapsis* sp. nondescr.; HAEHL (110) p. 24.
- Astropyga*; DELAGE (54) p. 232. *A. denudata*, descr.; DE MEIJERE (57) p. 57, pls. iv, xiv. *A. elastica*, holotype syn. of *A. radiata*, but Bell 1899 is a *Micropyga*; MORTENSEN (195) p. 20. *A. pulvinata*; DE MEIJERE (57) p. 206: pedicellariae, specimens recorded fr. western Pacific are *A. radiata* or *Chaetodiadema*; MORTENSEN (195) p. 20, pl. iii, iv. *A. radiata*; BELL (22A): MARTENS (185) p. 132: DE MEIJERE (57) p. 206, and young, p. 56: incl. *A. elastica*, *freudenbergi*, *mossambica*, tubercles, radioles, spicules, pedicellariae; MORTENSEN (195) p. 18, pl. iii-v.
- †*Atelospatangus*; AGASSIZ (3) p. 200: DELAGE (54) p. 268.
- Boletia bizonata* is a *Psammechinus*; MORTENSEN (195) p. 120.
- †*Bothriocidaridae* defined, as Fam.; KLEM (142) p. 14: as Suborder; DELAGE (54) p. 217.
- †*Bothriocidaris* descr.; DELAGE (54) p. 217, fig.: compared to *Phormosoma* juv.; AGASSIZ (3) p. 79, 80: defined; KLEM (142) p. 14. *B. globulus*, descr.; KLEM (142) p. 15: anal system and interambulacral; AGASSIZ (3) p. 80. *B. phaleri* [sic] descr.; KLEM (142) p. 15.
- †*Bothriocidaroida* defined; KLEM (142) p. 14.
- Breynia*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1400. *B. australasiae*, fascioles; DE MEIJERE (57) p. 192.
- †*Brissoma*; DELAGE (54) p. 270.
- †*Brissopneustes suecicus*; TÖRNEBOHM (267) p. 143.
- Brissopsis* (seu *Bryssopsis*); DELAGE (54) p. 270, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1395. †*B.* sp. nondescr.; BARRON (15) p. 607. *B. columbaris* compared with *B. lyrifera* & *Toxobrissus*; AGASSIZ (3) p. 190, pls. c, cii, ciii. *B. luzonica*, pedicellariae, spicules, young, comparison with *B. lyrifera*; DE MEIJERE (57) p. 188, pls. v, xxiii: criticised; AGASSIZ (3) p. 192. *B. lyrifera*; BELL (22A). †*B. nicoleti*; SCHUETZE (251) p. 185. †*B. pechiotii*; BELLINI (23) p. 5.
- Brissus* (seu *Bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1394. *B. carinatus*; DE MEIJERE (57) p. 184: †FOURTAU (83) p. 444.
- Bryssopsis* & *Bryssus*, vide *Brissopsis* & *Brissus*.
- Caenopedina*; DELAGE (54) p. 233. *C. mirabilis*, spicules, pedicellariae; MORTENSEN (195) p. 34, pl. iii, iv.
- Calveria* W. Thoms.; DELAGE (54) p. 223: name not applicable to an *Echinothurid* because originally given to an *Asterid*; AGASSIZ (3) p. 84. *C. gracilis*, radioles, pedicellariae; DE MEIJERE (57) p. 34, 205, pl. xiii: incl. *Asthenosoma longispinum* Yosh.; MORTENSEN (194) p. 89.
- Calymne* descr.; DELAGE (54) p. 265: diagnosis; MEISSNER in HAMANN (112) p. 1403: plastron; AGASSIZ (3) p. 154.
- †*Caratomus*:—*C.* sp. radioles; SCHLUETER (245). *C. laubei*; ZAHÁLKA (296) p. 18, 149. *C. peltiformis*; TÖRNEBOHM (267) p. 136.

- +*Cardiaster*:—*C. ananchytis*; FLEGEL (79): ZAHÁLKA (296) p. 44, 149: (olim *Micraster* cf. *cortestudinarium*); PETRASCHECK (216): great size, radioles attached; ROWE (235) p. 252, 262, 294. *C. cotteau*; ROWE (235) p. 248, 293. *C. patagonicus* Steinm. MS.; WILCKENS (287). *C. pilula*; BERG (24): ROWE (235) p. 239, 265, 294.
- Cassidulinae* defined with list of genera in Subfam. *Echinon-*, *Nucleolit-*, *Echinolamp-inae*; DELAGE (54) p. 263.
- +*Cassidulus* [fig. 340, called *C. lapiscanceri* is really *Leodia hexapora*, fide LAMBERT]; DELAGE (54) p. 264, figg. *C. elongatus*; BERG (24). *C. eugeniae*, apical system: AGASSIZ (3) p. 120, fig.
- +*Catopygus*:—*C. albensis*; PETRASCHECK (216): ZAHÁLKA (296) p. 18, 71, 149. *C. fastigatus*; op. cit. p. 149. *C. minor*, *C. rotundus*; TÖRNEBOHM (267) p. 136.
- Centrocidaris* n. sg. [of *Goniocidaris*?] for *G. canaliculata* & *G. doederleini* (p. 32), the latter descr. (p. 33, pls. v, xiv), shape of test (p. 1) anal plates in young (p. 7, f. 25); AGASSIZ (3).
- Centrostephanus*; DELAGE (54) p. 232. *C. longispinus*, spicules, pedicellariae (p. 32, pl. iv, v); *C. rodgersi*, spicules, pedicellariae (p. 33, pl. iii-v); MORTENSEN (195).
- Chaetodiadema*; DELAGE (54) p. 232. *C. granulatum*, descr., also young; DE MEIJERE (57) p. 54, 206, pls. iii, xi, xiv: detailed descr., also young fr. Maldives; MORTENSEN (195) p. 22, pl. i, iii, iv, v. *C. japonicum* n. sp. Sagami B., 30 fm.; op. cit. p. 28, pl. ii.
- Chondrocidaris* (vide et. *Cidaris*); DELAGE (54) p. 227.
- +*Chrysomelon pictum* vide *Leiopedina tallavignesi*.
- +*Chuniola carolinae*, Gagel's pl. xxiv, f. 3, not this sp.; LAMBERT in Review of GAGEL.
- Cidarida* defined (p. 216) descr. (p. 225), with Fam. *Cidarisinae* (p. 226); DELAGE (54).
- Cidaridae*, brief systematic account; FRITEL (86). Vide *Centrocidaris*.
- Cidaris* (vide etiam s.-gg. *Centro-*, *Chondro-*, *Disco-*, *Doro-*, *Gonio-*, *Leio-*, *Podo-*, *Poro-*, *Rhabdo-*, *Stephano-*, *Stereo-*, *cidaris*, and *Phyllacanthus*) descr.; DELAGE (54) p. 226, figg: sensu Mortensen, heterogeneous; AGASSIZ (3) p. 23. *C. sp.*; BELL (22A). +*C. sp.*; BOEHM (28) p. 8, pl. i: BURNET (33): USSING (275) p. 84, fotogr.: KITTL (141) p. 703. +*C. abichi*; SIEMIRADZKI (255) p. 140. +*C. acicularis*; CHECCIA (37). *C. affinis*; AGASSIZ (3) p. 22. +*C. amalthei*; SCHAEFER (242) p. 34. +*C. andreae*; LISSAJOUS (153) p. 181: allied to *C. cucumifera*; LAMBERT in Review. *C. annulifera* Lam. is var. or close ally of *C. baculosa*; MORTENSEN (195) p. 6. +*C. asperula*; COLLET (44) p. 70. +*C. avenionensis*; COUFFON (46) p. 42: radioles, measurements, distrib.; SCHUETZE (251) p. 162, pl. ii: differs fr. this sp. in shape and size; LAMBERT in Review. *C. baculosa*; MARTENS (185):=*pistillaris*, compared with *C. annulifera*, divided according to radioles into var. *typica*, *annulifera*, *brevicollis* var. nov. and others; DE MEIJERE (57) p. 9, pls. ii, xi. +*C. berthelini*; COLLET (44) p. 70. *C. cf. biformis*; KITTL (141) p. 703. *C. (Stephanocidaris) bispinosa*, notes chiefly on radioles, comparison with *Rhabdocidaris annulifera*; DE MEIJERE (57) p. 4, 204, pls. i, ii. +*C. blumenbachi* & +*C. cervicalis*; MAIRE (178): ROLLIER (230) p. 466, 467. +*C. clavigera*; ROWE (235) p. 252, 293. +*C. coronata*; FUGGER (92) p. 339: MAIRE (178); SIEMIRADZKI (255) p. 140. +*C. cragini* n. sp., Lower Cretaceous, Honduras, radiole only; LORIOL (162) p. 58, pl. iv. +*C. cucumifera*; RICHE (228) p. 208. +*C. curvata*; ROLLIER (230) p. 464. +*C. dissimilis*; STRANGWAYS (266) p. 80. +*C. aff. dorsata*; KITTL (141) p. 579. +*C. edwardsi*?; SHORT (254). *C. (Histocidaris) elegans*, both crenulate and smooth tubercles, radioles, pedicellariae, spicules &c. (p. 24, pl. xii) also young of 3-7 mm. diam. (p. 25, pls. ii, xii); DE MEIJERE (57). +*C. erbaensis*; MARIANI (183) p. 154. +*C. filograna*; SIEMIRADZKI (255) p. 140. *C. (Petalocidaris?) fimbriata*

- n. sp.* off Ceram, 567 m.; DE MEIJERE (57) p. 22, pls. iii, xii. +*C. florigemma*, MAIRE (178): SIEMIRADZKI (255) p. 140: var. *phylastarte*; ROLLIER (230) p. 466. *C. (Petalocidaris) florigera*, radioles, spicules, pedicellariae; DE MEIJERE (57) p. 21, pl. xii. +*C. fusiformis*; COLLET (44) p. 77. +*C. gaultina*; FEARNSIDES (76): STRANGWAYS (266) p. 78. +*C. gibberula*; COLLET (44) p. 76. *C. (Chondrocidaris) gigantea* (p. 204), *C. glandulosa n. sp.* Java Sea, 69 m. (p. 13, pl. i); DE MEIJERE (57). +*C. gourdoni*; GOURDON (102) p. 222. +*C. grandaeva*; LANGENHAN (150). *C. (Stereocidaris) grandis*, radioles; DE MEIJERE (57) p. 17. +*C. helenae*, discussed; LAMBERT in Review of VINASSA. *C. (Discocidaris?) hirsutispinus n. sp.* Gilolo Passage, 469 m.; DE MEIJERE (57) p. 20, pl. xii. +*C. hirudo*; COLLET (44) p. 70: HINDE (125) p. 235 (p. 256, 266, 293. +*C. histicoides*; ROLLIER (230) p. 464: WALTHER (281) p. 158. *C. (Phyllacanthus) imperialis*, incl. *P. dubius*, varr. *typica* & *fustigera* associated (p. 22). *C. (Stereocidaris) indica*, perhaps = *S. alcocki* (p. 18, pls. i, xi, xii), *C. (S.) japonica*, radioles & pedicellariae (p. 16, pl. xi); DE MEIJERE (57). +*C. lo[ae]viscula*; LISSAJOUS (153) p. 181. +*C. cf. limaria*, radiole; SCHUETZE (251) p. 165, pl. ii. *C. luetkeni*, syn. of *Stephanocid. bispinosa*; MORTENSEN (195). *C. maculicollis*, descr.; DE MEIJERE (57) p. 15, pls. iii, xi. +*C. marginata* (p. 181), *C. aff. martini* (p. 180); LISSAJOUS (153). *C. metularia*; HERDMAN (120) p. 138: notes on radioles in young and adult; DE MEIJERE (57) p. 7: var. *spuria*; MARTENS (185) p. 132. *C. (Histicidaris) misakiensis*, descr. & compared with *Porocidaris mulleri*; DE MEIJERE (57) p. 27, pls. ii, xii. *C. papillata*; JAHN (135): NOBRE (198) p. 54. +*C. cf. papillata*; LUPI (168). +*C. perlata*; COLLET (44) p. 80. +*C. perornata*; BURNET (33): HINDE (125). *C. pistillaris*; MARTENS (185). +*C. pomeli*; GOURDON (102) p. 222. +*C. pretiosa*; ZLATARSKI (299). +*C. propinqua*; SIEMIRADZKI (255) p. 140. +*C. regnyi n. sp.*, Norian of Sutorman, Montenegro, based on radioles figd. VINASSA DE REGNY (315) Zool. Rec. 1903; LAMBERT in Review. *C. reini*, small individuals, notes chiefly on radioles; DE MEIJERE (57) p. 5, pls. i, xi. +*C. reussi*; JAHN (134) p. 86. +*C. roemeri*; KITTL (141) p. 645. +*C. sceptrifera*; BURNET (33): COLLET (44) p. 77: JAHN (134) pp. 81, 86: ROWE (235) p. 252, 256, 266, 293. *C. serrata*; +COLLET (44) p. 76: (*Discocidaris?*), spicules & pedicellariae figd.; DE MEIJERE (57) p. 19, pl. xii. +*C. smithi*; STRANGWAYS (266) p. 40, 49, 54, 59. +*C. sorigneti*; JAHN (134) p. 86, & (135): distinguished from *C. clavigera*; JUKES-BROWNE (137) p. 456. +*C. spinulosa*; RICHE (228) p. 209. +*C. striato-granosa*; CHECCHIA (37). +*C. subularis*; CHECCHIA (37). +*C. subvesiculosa*; JAHN (134) pp. 81, 82, 86: ROWE (235) p. 252, 256, 266, 293. +*C. cf. tessurata*; PATRINI (208). *C. verticillata*; MARTENS (185) p. 132: notes on radioles; DE MEIJERE (57) p. 8. +*C. vesiculosa*; ARMASCHESKY (14): JAHN (135): STRANGWAYS (266) p. 80. +*C. zschokkei*; RICHE (228) p. 209.
- Cidarisininae* defined with list of genera; DELAGE (54) p. 226.
- +*Cidaropsis minor*; LISSAJOUS (153) p. 166.
- Cionobryssus* (seu *bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1399.
- Clypeaster* descr.; DELAGE (54) p. 254, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1381: diagnosis, incl. *Echinorodum*; FOURTAU (83) p. 417. *C. audouini n. sp.* G. of Suez, on reefs; op. cit. p. 418, pl. i. *C. humilis* (= *rosaceus*); HERDMAN (120) p. 141. +*C. priemi*; FOURTAU (83) p. 421, fig. *C. rarispinus*, descr., distinguished from *Alezandria magnifica*; DE MEIJERE (57) p. 134, pls. vi, xviii, xix. *C. reticulatus* Leske, vide *C. scutiformis*. *C. rosaceus* L. (= *humilis* Leske, q. v.), pedicellariae & spicules, also young; DE MEIJERE (57) p. 133, pl. xviii; incl. *C. humilis*, G. of Suez & beaches, distinguished fr. *C. priemi*;

- FOURTAU (83) p. 420, fig. *C. scutiformis*; HERDMAN (120) p. 141 : radioles, pedicellariae, spicules; DE MEIJERE (57) p. 131, pl. xviii: incl. *C. reticulatus* Leske, G. of Suez & beaches; FOURTAU (83) p. 422. *C. testudinarius*; MARTENS (185).
- Clypeastrida* defined (p. 248) descr. (p. 249) with Famm. *Fibul-*, *Clypeastr-*, & *Scutell-inae* (p. 254); DELAGE (54).
- Clypeastrinae* defined with list of genera; loc. cit.
- Clypeastroida* systematic value of various characters, esp. radioles; DE MEIJERE (57) p. 103.
- †*Clypeolampas lesteli*; ROUSSEL (232) p. 15, & (233) p. 28.
- †*Clypeus* :—*C. altus*; LISSAJOUS (153) p. 176 : distinguished from *C. ploti*; CLERC (42) p. 95. *C. deshuyesi*; LISSAJOUS (153) p. 176. *C. ploti*; CLERC (42) p. 95. *C. subulatus*; STRANGWAYS (266).
- Coelopleurus* descr.; DELAGE (54) p. 237. †*C. aequis*, †*C. isabellae*; GOURDON (102) p. 224. *C. maillardi* incl. *Salmaeis elegans* Bell; DE MEIJERE (57) p. 68.
- †*Collyrites*; DELAGE (54) p. 266, fig. *C. acuta* (p. 179), *C. analis* incl. *C. ovalis* pars. (p. 178); LISSAJOUS (153). *C. bicordata*; op. cit. p. 179 : STRANGWAYS (266) p. 30, 40, 49. *C. capistrata* & *C. elliptica*; LISSAJOUS (153) p. 179. *C. fribourgensis*; DEL CAMPANA (55) p. 267. *C. ovalis*, incl. *C. analis*; CLERC (42) p. 98. *C. ringens*; op. cit. p. 97 : incl. *C. eudesi*; LISSAJOUS (153) p. 177. *C. thermarum*; SIEMIRADZKI (255) p. 142. *C. verneuili*; DEL CAMPANA (55) p. 267.
- Colobocentrotus*; DELAGE (54) p. 246 : diagnosis; MEISSNER in HAMANN (112) p. 1377.
- †*Conoclypus* (vel -eus) descr.; DELAGE (54) p. 249. *C. conoideus*; FUGGER (92) p. 339, 345 : GOURDON (102) p. 222. *C. pyrenaicus*; loc. cit.
- †*Conoclypinæ* defined with list of genera; DELAGE (54) p. 249.
- Conolampas* diagnosis; MEISSNER in HAMANN (112) p. 1387 : maintained (p. 117), apical system (p. 173, pl. lxxv), *C. sigsbei*, details of test (p. 117, fig., pl. lxxv); AGASSIZ (3).
- Conulus*, vide *Echinoconus*.
- †*Coraster margaritæ*; GOURDON (102) p. 217.
- Cottalidia forbesiana* referred to *Prionechinus* (q. v.); DE MEIJERE (57) p. 71.
- †*Cyclaster gourdoni*; GOURDON (102) p. 221.
- †*Cyphosoma* [incl. *Phymosoma*]; DELAGE (54) p. 238. *C. archiaci*; ROUSSEL (233) p. 36. *C. corollare*; ROWE (235) p. 252, 266, 293. *C. gregoirei*; ROUSSEL (232) p. 15. *C. koenigi*; HINDE (125). *C. radiatum*; BERG (24) : ROWE (235) p. 241, 293 : et. sub *Phymosoma*; PETRASCHECK (216) : ZAHÁLKA (296) p. 18, 149. *C. regulare*, *C. tenuistriatum*; COLLET (44) p. 76.
- Cyphosomina* defined with Famm. *Arbaci-*, & *Cyphosom-inæ*; DELAGE (54) p. 237.
- Cyphosominae* defined with list of genera; DELAGE (54) p. 238.
- Cystechinus* diagnosis; MEISSNER in HAMANN (112) p. 1402 : discussed, †*C. crassus* probably not this genus (p. 157), *C. loveni* descr. (p. 158, pls. B, lxxv-lxxix), actinal area (p. 122, 123, 130, figg.), *C. wyvillei*, actinal area (p. 122, 123, 130, pl. lxxx); AGASSIZ (3).
- †*Cystocidaridae* defined as Suborder; DELAGE (54) p. 217.
- †*Cystocidaroida* defined; KLEM (142) p. 12.
- Dermatodiadema* Al. Ag. 1898, incl. *Aspidodiadema microtuberculatum*, which is genotype of *Plesiodiadema* Pomel 1883 non Duncan 1885; MORTENSEN (195) p. 38 : discussed, incl. also *Aspidodiadema antillarum*; AGASSIZ (3) p. 58 : descr.; DELAGE (54), p. 230. *D. amphigymnum*; MORTENSEN (195) p. 38 : descr.; DE MEIJERE (57) p. 47, pl. xiv. *D. globulosum* descr. (p. 60, pls. xxiv, xxvi, xxviii, xxix), *D. horridum* descr. (p. 63, pls. xxiv-xxix); AGASSIZ (3). *D. indicum*;

- MORTENSEN (195) p. 38 : descr. ; DE MEIJERE (57) p. 46, pls. iii, xiv.
D. molle; MORTENSEN (195) p. 38.
- †*Desorella* discussed (?incl. *Pachyclypeus* ; LAMBERT in Review) & *D. elata* descr. & figd. ; WOODS (293).
- Diadema* descr. ; DELAGE (54) p. 231 : diagnosis ; FOURTAU (83) p. 411.
D. antillarum, descr. (p. 14, pl. iii, v) [v. et. sub *Dermatodiadema*].
D. globulosum [ditto], distinguished from *D. saxatile*, but probably syn. of *D. savignyi* (p. 17, pl. iii), *D. lamarecki* Rouss., syn. of *D. saxatile* (p. 17), *D. mexicanum* descr. (p. 15), *D. paucispinum*, perhaps syn. of *D. savignyi* (p. 17), *D. savignyi*, descr. (p. 16, pl. iii-v) ; MORTENSEN (195). *D. saxatile* ; BELL (22A) : HERDMAN (120) p. 139 : MARTENS (185) : (= *setosum*), radioles, pedicellariae ; DE MEIJERE (57) p. 49, pl. xiv : incl. *D. setosum*, distinguished from *D. antillarum* & *D. savignyi*, descr., esp. pedicellariae, spicules, & radioles ; MORTENSEN (195) p. 9, pl. iii-v. *D. setosum*, incl. *D. savignyi* ; FOURTAU (83) p. 412. †*D. texanum* ; UDDEN (273) p. 37.
- Diadematidae*, brief systematic account ; FRITEL (87) : classification of genera, value of various characters, Fam. should include *Diadema*, *Echinothrix*, *Astropyga*, *Chaetodiadema*, *Centrostephanus*, *Lissodiadema*, *Placodiadema*, *Helikodiadema* ; MORTENSEN (195) p. 40.
- Diademida* defined (p. 216) descr. with Tribes *Diadem-*, *Salen-*, *Cyphosom-*, *Echin-*ina (p. 229) ; DELAGE (54).
- Diademina* defined with Famm. *Aspidodiadem-*, *Diadem-*, *Micropyg-*, *Pedin-*, & *Hemicidaris-*inae ; DELAGE (54) p. 230.
- Diademinae* defined with list of genera ; loc. cit.
- †*Diademopsis* :—*D. buccalis* Dumortier non Ag. is syn. of *D. serialis*, & *D. nuda* Dum. is syn. of *Palaeopedina globulus* ; LAMBERT (148) p. 544. *D. serialis* ; LISSAJOUS (153) p. 165.
- Dialithocidaris* ; DELAGE (54) p. 237 : diagnosis (p. 55), *D. gemmifera* descr. (p. 56, pls. xv, xxiii) ; AGASSIZ (3).
- †*Dictyopleurus* ; MORTENSEN (195) p. 112.
- †*Diplocidaris* ; DELAGE (54) p. 229. *D. gigantea* ; MAIRE (178).
- †*Diplopodia* ; DELAGE (54) p. 235. *D. aequale* (p. 165), *D. areolatum* (p. 163) ; LISSAJOUS (153). *D. aroviense* ; op. cit. p. 165 : MAIRE (178), *D. bipunctatum* ; LISSAJOUS (153) p. 165 : probably not this sp. ; LAMBERT in Review. *D. calloviense* (p. 162), *D. langi* (p. 164) ; LISSAJOUS (153) : cannot be Desor's sp., wh. is a *Polydiadema* ; LAMBERT in Review. *D. martini* n. sp. Lr. Callovian, Mancey nr. Tournus, cotypes Mus. Tournus, Lissajous ; LISSAJOUS (153) p. 162, pl. ii. *D. oppeli* ; WALTHER (281) p. 167. *D. taffi*, descr. ; LORIEL (162) p. 56, pl. iv. *D. texanum* ; RICHARDSON (227) p. 48.
- Diplopodidae* rejected ; MORTENSEN (195) p. 44.
- Diploporus* Trosch., rejected (p. 75) but might be used for *Salmacis dussumieri* (p. 76) ; MORTENSEN (195).
- Diplotheacanthus* diagnosis ; MEISSNER in HAMANN (112) p. 1382.
- Discocidaris* (vide etiam sub *Cidaris*) ; DELAGE (54) p. 227.
- †*Discocystis* ; KLEM (142) p. 73.
- †*Discoidea* :—*D. cylindrica* ; STRANGWAYS (266) p. 80 : WOLLEMAN (290). *D. infera*, *D. minima*, *D. pentagonalis* ; COLLET (44) p. 76.
- †*Ditremaster nux* ; GOURDON (102) p. 220.
- Dorocidaris* (vide etiam sub *Cidaris*) ; DELAGE (54) p. 228, fig. *D. bracteata* (p. 23), *D. panamensis*, descr. & discussed (p. 20, pls. i-v) shape of test (p. 1, f. 3) size of actinal system (p. 3, f. 12) anal plates in young (p. 7, f. 22, 24) growth of coronal plates (p. 9, f. 26-29 & 43-45) ; AGASSIZ (3). *D. papillata* ; DE MEIJERE (57) p. 204 : juv., anal system (p. 3, f. 14), pedicellariae (p. 22) ; AGASSIZ (3).
- †*Dysaster* :—*D. granulatus* ; WELSCH (283) p. 27 : LISSAJOUS (153) p. 180. *D. moeschi* ; loc. cit. *D. siliceus* ; SIEMIRADZKI (255) p. 142.

Dysasterinae; DELAGE (54) p. 266.

Echinanthus testudinarius; HERDMAN (120) p. 141.

Echinarachnius; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. parma*, descr., range; CLARK (38) p. 564, pl. x.

Echinina defined with Famm. *Temnopleurus*-, *Stomopneustes*-, *Echinus*-, *Toxopneustes*-, & *Echinometrinae*; DELAGE (54) p. 239.

Echininae; DELAGE (54) p. 242.

Echinobrissus, vide etiam *Nucleolites*. †*E. amplus* juv.; LISSAJOUS (153) p. 175. †*E. clunicularis*; loc. cit.: STRANGWAYS (266) p. 23, 49. †*E. depressus*, †*E. dimidiatus*; op. cit. p. 40. *E. (Oligopodia) epigonus*, descr., compared with *Catopygus recens*; DE MEIJERE (57) p. 141, pl. xix. †*E. goldfussi*; SIEMIRADZKI (255) p. 141. †*E. aff. olfersii*; ZLATARSKI (299). †*E. orbicularis*; LISSAJOUS (153) p. 176: STRANGWAYS (266) p. 23. †*E. peroni*; GLANGEAUD (101) p. 13. †*E. scutatus*; LISSAJOUS (153) p. 176: STRANGWAYS (266) p. 49, 54 & fig. †*E. terquemi*; LISSAJOUS (153) p. 175.

Echinocardium; DELAGE (54) p. 267, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1399. *E. sp.* juv.; LO BIANCO (154) p. 61, pl. xl. *E. australe*; BELL (22A); HALL (111) p. 73. *E. cordatum*; MAR. BIOL. ASS. (184) p. 211: NOBRE (198) & (199): NORDMANN (200). †*E. deikei*; SCHUETZE (251) p. 185. *E. flavescens*; BELL (22A); MAR. BIOL. ASS. (184) p. 211. †*E. orthonotum*; CLARK (39) p. 430, pl. cxix. *E. penatitidum*; MAR. BIOL. ASS. (194) p. 211.

Echinocidaris vide *Arbacia*.

†*Echinocoenus* (seu *Galerites* [melius *Conulus*]):—*E. conicus*; ROWE (235) p. 251: WRIGHT (294). *G. globulus*; HINDE (125). *E. roemeri*; GOURDON (102) p. 218. *G. vulgaris*; USSING (275) p. 86, fig.

†*Echinocorys* (seu *Ananchites*):—*A. gibba*; RABELLE (221). *A. ovata*; ARMASCHIEWSKY (14): FUGGER (92) p. 339: KARAKASH (138) p. 26: TÖRNEBOHM (267) p. 132: USSING (275) p. 85, fig.: var. *pyramidata*; BERG (24). *E. pyramidatus*; ROWE (235) p. 256. *A. scutatus*; BURNET (33). *E. scutatus*, cum varr. *pyramidatus* et *striatus*; HINDE (125). *A. sulcata*; GRÖNWALL (109) p. 29, & (108) p. 429: TÖRNEBOHM (267) p. 143 & fig. *E. vulgaris*; DIBLEY (62): GOURDON (102) p. 218: ROWE (235) p. 239, 243, 247, 250, 255, 265, 293.

Echinocorytidæ discussed; DE MEIJERE (57) p. 152.

Echinocrepis; DELAGE (54) p. 267: diagnosis; MEISSNER in HAMANN (112) p. 1405. *E. cuneata*, actinal area (p. 124, 130), *E. setigera* descr. (p. 144, pls. lxvi-lxix also p. 124, 125, 127, 128, 130, 131); AGASSIZ (3).

Echinocyamus descr.; DELAGE (54) p. 254, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1380. *E. sp.*; HALL (111) p. 72. *E. crispus* descr. & compared with *E. pusillus* (p. 105, pls. vi, xvii), *E. provectus*, descr. (p. 109, pls. vi, xvii, xviii); DE MEIJERE (57). *E. pusillus*; MAR. BIOL. ASS. (184) p. 210: NOBRE (198) p. 55, & (199): †DOLLFUS (65) p. 662: †PATRINI (208) p. 741. †*E. pyriformis*; COUFFON (46) p. 43. *E. scaber* n. sp., Malay Archipelago, 120-1886 metres; DE MEIJERE (57) p. 108, pls. vi, xvii.

†*Echinocystidae* defined; KLEM (142) p. 13.

†*Echinocystis* descr.; DELAGE (54) p. 217: syn. *Cystocidaris*, defined, *E. pomum*, incl. *E. uva*, descr.; KLEM (142) p. 13.

Echinodiscus Leske; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. auritus*; HERDMAN (120) p. 142: radioles, pedicellariae, &c.; DE MEIJERE (57) p. 138, pl. xix.

†*Echinodiscus* Worth. & Miller, vide iv, a.

Echinolampas; DELAGE (54) p. 264: diagnosis; FOURTAU (83) p. 427: MEISSNER in HAMANN (112) p. 1387: apical system; AGASSIZ (3) p. 173, pl. lxv. *E. depressa*, details of test; op. cit. p. 118, pl. lxiv, lxv:

- radioles, pedicellariae, compared with *E. alexandri* & *E. blanchardi*; DE MEIJERE (57) p. 144, pl. xix. †*E. ellipsoidalis*; GOURDON (102) p. 221. †*E. hemisphaericus*; COUFFON (46) p. 42: DOUXAMI (69) p. 188, 561. †*E. hovelacquei*; GOURDON (102) p. 221. *E. oviformis*; FOURTAU (83) p. 428: HERDMAN (120) p. 142. †*E. scutiformis*; DOUXAMI (69) p. 188, 561: SCHUETZE (251) p. 185. †*E. subsimilis*; FUGGER (92) p. 345.
- Echinolampinae*; DELAGE (54) p. 264.
- Echinometra* descr.; DELAGE (54) p. 246: diagnosis; FOURTAU (83) p. 415: MEISSNER in HAMANN (112) p. 1377. *E. lucunter*; MARTENS (185) p. 131: G. of Suez & †beaches; FOURTAU (83) p. 415. *E. mathaei* (= *lucunter* Leske), compared with *E. oblonga*; DE MEIJERE (57) p. 101. *E. oblonga*, probable new genus; DELAGE (54) p. 246: formerly confused by Mortensen with *E. mathaei*, now distinguished; MORTENSEN (195) p. 123, pl. v, vii. *E. subangularis*; BRANNER (32) p. 271.
- Echinometridae*, vide *Selenechinus*.
- Echinometrinae* defined with list of genera; DELAGE (54) p. 246.
- Echinoneus* descr.; DELAGE (54) p. 263: diagnosis; MEISSNER in HAMANN (112) p. 1385. *E. cyclostomus*; HERDMAN (120) p. 142: radioles &c.; DE MEIJERE (57) p. 139: a sand-feeder; GARDINER (95) p. 340. *E. minor*; MARTENS (185).
- Echinoninae*; DELAGE (54) p. 263.
- Echinorodum* vide *Clypeaster*.
- Echinosoma*; DELAGE (54) p. 223.
- †*Echinospatagus cordiformis*; STRANGWAYS (266) p. 72, 76.
- Echinostrephus*; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376. *E. molare*; HERDMAN (120) p. 139.
- Echinothrix*; DELAGE (54) p. 232. *E. calamaris*, incl. *E. desori*; DE MEIJERE (57) p. 51: fr. Redang, ambulacral radiole, pedicellariae; MORTENSEN (195) p. 30, pl. iii-v. *E. diadema*; HERDMAN (120) p. 139: MARTENS (185) p. 132: (= *turcarum*), radioles, pedicellariae; DE MEIJERE (57) p. 50, pl. xiv: pedicellariae, spicules; MORTENSEN (195) p. 31, pl. iii, iv.
- †*Echinothuria* sp.; SALTER (240).
- Echinothurida* defined (p. 216) descr. (p. 219) with Fam. *Echinothuriinae* (p. 221); DELAGE (54).
- Echinothuridae* maintained, relations discussed, derived from *Lepidocentridae*; MORTENSEN (195) p. 51.
- Echinothuriinae* defined with list of genera; DELAGE (54) p. 221.
- Echinus* descr.; DELAGE (54) p. 242, & figg.: diagnosis; FOURTAU (83) p. 416: MEISSNER in HAMANN (112) p. 1369. *E. acutus*; MAR. BIOL. ASS. (184) p. 210. *E. albocinctus* descr., distinguished from *E. magellanicus*, also in †Pliocene; LORIOL (162) p. 18, pl. i. *E. angulosus*; BELL (22A). *E. armatus* vide *Selenechinus*. *E. elegans*; DE MEIJERE (57) p. 208. *E. esculentus*; DEKHUYZEN (51): GEMMILL & LINSTOW (99): MAR. BIOL. ASS. (184) p. 210: NOBRE (198) p. 55 & (199): section of radial cord figd.; ROY. COLL. SURGEONS (237) p. 4. *E. gilchristi* n. sp., 33-700 fm., S. African coast, various locc.; BELL (22A) p. 170. †*E. lineatus*; WALTHER (281) p. 158. *E. magellanicus*, descr., is not *Sterechinus*, distinguished from *E. margaritaceus*; LORIOL (162) p. 13, pl. i. *E. microtuberculatus*; HERBST (117 & 119): development; SCHMIDT (246): vide etiam sub *Parechinus*. *E. miliaris*; HERBST (117): JANNSENS (136): MAR. BIOL. ASS. (184) p. 210: RETZIUS (226) p. 28: ZIEGLER (298): vide etiam sub *Parechinus*. †*E. molinis* [*monilis*]; COUFFON (46) p. 41. *E. neglectus*; RETZIUS (226) p. 28. *E. norvegicus* not bipolar; MEISSNER (186) p. 27. *E. saxatilis*; PARONA (207) p. 384. *E. trizonalis* is a *Psammechinus*; MORTENSEN (195) p. 120. *E. verrucu-*

- latus*, distinct from *E. angulosus*, G. of Suez and beaches; FOURTAU (83) p. 416.
- Echinusinae* defined with lists of genera; DELAGE (54) p. 242.
- †*Enallaster*:—*E. boehmi* n. sp. Lower Cretaceous, Honduras, also in Texas (p. 49, pl. iv), *E. sapperi* n. sp. ibid. (p. 47, pl. iv), *E. texanus*, descr., ibid. (p. 52, pl. iv); LORIOU (162).
- Encope*; DELAGE (54) p. 255, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. emarginata*; LORIOU (162) p. 21.
- Eobrissus* n. g. of Prymnodesmid Spatangoids, genotype *E. townsendi* n. sp., coast of Oman; BELL (22).
- †*Eocidaris* defined; KLEM (142) p. 67. *E.?* sp.; KITTL (141) p. 685, pl. xxii. *E.* sp. Julien 1874 (p. 72); *E. blairi* descr. (p. 67); *E. drydenensis* (p. 71); *E. forbesianus* (p. 67), *E. hallianus*, *E. keyserlingi* (p. 68), *E. laevispinus*, *E. muensterianus* (p. 69), all descr.; *E. scrobiculata* (p. 71); *E. verneuillianus* descr. (p. 70): KLEM (142).
- †*Eotiaris*; KLEM (142) p. 74.
- †*Epiaster*:—*E. cuevasensis* n. sp., Lower Cretaceous, Honduras; LORIOU (162) p. 54, pl. iv. *E. distinctus*; COLLET (44) p. 44. *E. elegans*; RICHARDSON (227) p. 48. *E. gibbus*; GOURDON (102) p. 223. *E. cf. incisus*; SAVORNIN (241) p. 141. *E. renoti*; COLLET (44) p. 80.
- Eupatagus* (seu *Euspatagus*, seu *Euspatangus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1397. *E. formosus*; DAINELLI (49) p. 197 & (50). *E. ornatus* GOURDON (102) p. 223. *E. valenciennesi*; HALL (111) p. 73.
- Faorina*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1391. *F. chinensis*; DE MEIJERE (57) p. 183.
- Fibularia*; DELAGE (54) p. 254: diagnosis; MEISSNER in HAMANN (112) p. 1380. *F. australis?*, 12–15 petal-pores; HERDMAN (120) p. 141. *F. cribrellum*, descr.; DE MEIJERE (57) p. 112, pls. vi, xviii. †*F. ovata* (Münst. sub *Echinoneus*), descr.; SCHUETZE (251) p. 178, pl. ii. †*F. oviformis*; BELLINI (23) p. 8. *F. ovulum*, radioles and pedicellariae; DE MEIJERE (57) p. 111, pl. xviii. †*F. tarentina*; BELLINI (23) p. 5, 8. †*F. ursendorffensis* (K. Miller, sub *Echinocyranus* [sic]) descr.; SCHUETZE (251) p. 176, pl. ii. *F. volva*; DE MEIJERE (57) p. 111: †FOURTAU (83) p. 444.
- Fibulinae* defined with list of genera; DELAGE (54) p. 254.
- Galerites*, vide *Echinoconus*.
- †*Galeropygus*:—*G. marcoui*, *G. nodoti*, *G. sulcatus*; LISSAJOUS (153) p. 174.
- †*Gauthieria*, apical system; AGASSIZ (3) p. 40.
- Genicopatagus* (v. etiam sub *Argopatagus*); DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (112) p. 1389. *G. affinis*; AGASSIZ (3) p. 172, 183, pl. xci.
- Genocidaris* descr.; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *G.* sp. (p. 202), *G. decipiens* n. sp., Flores Sea, 40 m. (p. 76, pl. xvi), *G. monolini*, descr. (p. 74, pls. iv, xvi); DE MEIJERE (57).
- Glyphocyphinae* Duncan, discussed; DELAGE (54) p. 240.
- †*Glyphocyphus*; MORTENSEN (195) p. 112.
- †*Glyphosoma* [†err. pro *Cyphosoma*] *radiatum*; COLLET (44) p. 76.
- †*Glypticus hieroglyphicus*, incl. *G. magniflora* Étallon; LISSAJOUS (153) p. 169.
- Glyptocidaris*; DELAGE (54) p. 238. *G. crenularis* referred to *Phymosomatidae*; MORTENSEN (195) p. 47.
- Goniocidaris*; DELAGE (54) p. 227, fig. *G. canaliculata*, juv., anal system (f. 15) generic position discussed, includes *G. nutrix* (p. 4); AGASSIZ (3): vide etiam *Centrocidaris*. *G. doederleini*, ditto. *G. tubaria*; DE MEIJERE (57) p. 204: Victoria, probably incl. *G. geranioides*; HALL (111) p. 70.

- Goniopneustes*; DELAGE (54) p. 241: maintained; MORTENSEN (195) p. 102.
- Gymnechinus*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1371. *G. darnleyensis*, differences from type, pedicellariae; DE MEIJERE (57) p. 89, pl. xvii, but see p. 203: apical system, auriculae (p. 117), De Meijere's specimens are not this sp. (p. 116), *G. inconspicuus* n. sp. Funafuti (p. 118, pl. vi, vii); MORTENSEN (195), *G. pulchellus* n. sp., G. of Siam, 1-15 fm.; op. cit. p. 113, pl. i, ii, vii: DE MEIJERE (57) p. 203. *G. pumilio* n. sp. Malay Archipelago, 22-45 m.; op. cit. p. 90, pl. xvii, but = *Salmacis rufa* Bell, p. 203: is *Psammechinus*; MORTENSEN (195) p. 117. *G. versicolor* n. sp., Macclesfield Bank, = "*Temnopleurus reynaudi*" Bell; op. cit. p. 116, pl. vii.
- Gymnopatagus*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1397.
- Hapalosoma* (vide etiam *Hoplosoma*); DELAGE (54) p. 223, fig.: relations to *Asthenosoma*; MORTENSEN (194) p. 85. *H. pellucidum*, pedicellariae; DE MEIJERE (57) p. 37, pl. xiii.
- †*Heeistocyphus*; DELAGE (54) p. 233.
- Helicidaris*, descr.; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376.
- Hemiaster*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1390: discussed with *H. bufo* as genotype, with *Trachyaster* as subgenus (genotype *T. globulus*), its distinction from *Linthia* based on heteronomy of IR 1; BATHER (18) p. 297. †*H. affinis* distinguished (p. 22), †*H. angustipneustes*, incl. *H. stella* d'Orb. (p. 30); LAMBERT (147). †*H. bufo*; COLLET (44) p. 44. *H. cavernosus*; LUDWIG (164) p. 692. †*H. cubicus*; FOURTAU (82) p. 233: distinguished from *Linthia oblonga*; NEWTON (196). †*H. depressus*; JAHN (134) p. 81. *H. gallegosensis* n. sp. R. Gallegos, Patagonia, and young; LORIOL (162) p. 5, pl. i. †*H. gauthieri*; ROUSSEL (232) p. 15, & (233) pp. 28, 36. *H. gibbosus*; DE MEIJERE (57) p. 182. †*H. ligeriensis* distinguished; LAMBERT (147) p. 29. †*H. minimus*; ROWE (235) p. 241, 294. †*H. cf. minimus*; SCHARDT (244) p. 155. †*H. nasutulus* descr., is *Peroniaster*; LAMBERT (147) p. 22, 23. †*H. pellati*; GOURDON (102) p. 223. †*H. pisum* (p. 25), †*H. prunella* distinguished (p. 21, 30), †*H. punctatus* distinguished, horizon (p. 26), †*H. cf. punctatus*, Garumnian (p. 28), †*H. pusillus* young of *H. nasutulus* (p. 22), †*H. stella* Morton is *Bolbaster* (p. 31); LAMBERT (147). †*H. sudanensis* n. sp. Eocene, Garadimi and Tamaské in Sokoto; BATHER (18) p. 299, pl. xi: probably *Linthia*; LAMBERT in Review. †*H. suevicus*; SCHUETZE (251) p. 180. †*H. tamulicus*; LAMBERT (147) p. 29. †*H. vancouverensis* n. sp. Nanaimo group, Upper Cretaceous, Cowichan R. and Shopland, Vancouver Id., cotypes internal casts in Mus. Geol. Surv. Ottawa; WHITEAVES (285) p. 289. †*H. verneuilli*; ROUSSEL (233) p. 36. †*H. verticalis*; FUGGER (92) p. 345.
- †*Hemicidaris*, descr.; DELAGE (54) p. 234. *H. crenularis*; MAIRE (178). *H. intermedia*; op. cit.: ROLLIER (230) p. 466: STRANGWAYS (266) p. 59. *H. purbeckensis*; GLANGEAUD (101) p. 33. *H. undulata*; MAIRE (178). *H. zignoi*; DEL CAMPANA (55) p. 267.
- Hemicidarisinæ* defined with list of genera; DELAGE (54) p. 234.
- Hemipatagus mascareignarum* discussed; DE MEIJERE (57) p. 191.
- Hemipedina*, systematic position; DE MEIJERE (57) p. 67. †*H. chalmasi*, †*H. granulata*? juv., †*H. icaunensis*; LISSAJOUS (153) p. 166. *H. indica*, descr., esp. radioles & pedicellariae; DE MEIJERE (57) p. 65, pls. iii, xv, xvi. †*H. lorioli* n. sp., Bathonian, Davayé; LISSAJOUS (153) p. 167, pl. ii. †*H. woodwardi*; STRANGWAYS (266) p. 23.
- †*Hessotiarina minor* n. sp., Hettangian of Vendée; LAMBERT (148) p. 542, pl. xviii.

- Heteraster* compared with *Enallaster*; LORIOLO (162) p. 48. †*H. oblongus*; SCHARDT (244) p. 136.
- Heterocentrotus*; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1377: ditto, incl. *Acrocladia*; FOURTAU (83) p. 413. *H. mamillatus*; COUTIERE (48): DE MEIJERE (57) p. 102: MARTENS (185) p. 132: entrance to G. of Suez and fringed beaches, but not at Port Said as cited by Gauthier; FOURTAU (83) p. 414. *H. trigonarius*; DE MEIJERE (57) p. 102.
- †*Heterolampas maresi*; SAVORNIN (241) p. 150.
- †*Heterosalenia* discussed; DELAGE (54) p. 234.
- Histocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 228: rejected; AGASSIZ (3) p. 24.
- †*Holaster*; DELAGE (54) p. 265, fig. *H. carinatus*; RADKEVICH (222): WOLLEMAN (290). *H. faxensis*; TÖRNEBOHM (267) p. 143. *H. laevis*; STRANGWAYS (266) p. 80: WOLLEMAN (290). *H. nodulosus*; COLLET (44) pp. 44, 47, 70. *H. placenta*; BURNET (33): JAHN (134) pp. 83, 84, 86, 89: ROWE (235) p. 248, 294: distinguished from *H. planus*; JUKES-BROWNE (137) p. 458. *H. planus*; BURNET (33): PETRASCHECK (216): ROWE (235) p. 241, 243, 293: distinguished from *H. laevis*; JUKES-BROWNE (137) p. 457. *H. rotundus*; STRANGWAYS (266) p. 80. *H. scanensis*; TÖRNEBOHM (267) p. 132. *H. subglobosus*; STRANGWAYS (266) p. 80: WOLLEMAN (290): Lambert quoted; COLLET (44) pp. 70, 74. *H. suborbicularis* (p. 78), *H. trecensis*? (p. 80); STRANGWAYS (266).
- Holasterinae* defined with list of genera in Subfam. *Ananchytinae* & *Collyritinae*; DELAGE (54) p. 265.
- †*Holcopneustes gourdoni*; GOURDON (102) p. 220.
- Holactypida* defined with Fam. *Holactyp-*, & *Conoclypinae*; DELAGE (54) p. 248.
- Holactypinae* defined with list of genera; DELAGE (54) p. 248.
- †*Holactypus* descr.; DELAGE (54) p. 248, fig. *H. corallinus*; LISSAJOUS (153) p. 172. *H. depressus*; CLERC (42) p. 96: STRANGWAYS (266) p. 23: var.; LISSAJOUS (153) p. 172, pl. ii. *H. hemisphaericus*; op. cit. p. 171: incl. *H. devauxianus*, resemblance to *H. depressus* in young; CLERC (42) p. 97. *H. oblongus*; STRANGWAYS (266) p. 40. *H. planatus*; UDDEN (273) p. 37. *H. scutatus*; STRANGWAYS (266) p. 40. *H. texanus*; RICHARDSON (227) p. 48.
- Holopneustes*; DELAGE (54) p. 241. *H. inflatus*, holotype examined; MORTENSEN (195) p. 107. *H. porosissimus*; HALL (111) p. 72: measurements; MORTENSEN (195) p. 107. *H. purpurascens*, holotype descr.; op. cit. p. 106, pl. ii, vii.
- Homolampas* (v. etiam sub *Argopatagus*); DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1401. *H. fragilis*, *H. fulva* (p. 175, figg.), *H. gracilis* (p. 176), *H. hastata* descr. (p. 175, pls. lv, lxiii, lxiv); AGASSIZ (3). *H. rostrata* descr.; DE MEIJERE (57) p. 196, pl. xxiii.
- Hoplosoma* [err. pro *Hapalosoma*], rejected; AGASSIZ (3) p. 85.
- †*Hyboclypus* (seu -eus):—*H. sp.*; SIEMIRADZKI (255) p. 141. *H. gibberulus*, difference between Callovian & Bathonian forms; *H. ovalis*: LISSAJOUS (153) p. 173.
- Hygrosoma*; DELAGE (54) p. 223: rejected; AGASSIZ (3) p. 85. *H. hoplakantha*, radioles, pedicellariae, spicules, also young specimens; DE MEIJERE (57) p. 37, pl. xiii.
- †*Hypodiadema balsumi* Stopp., probably *Acrosalenia*; LAMBERT (148) p. 540.
- Hypsiechinus* descr.; DELAGE (54) p. 239, figg. *H. coronatus*; LUDWIG (165).
- †*Iheringiana*; DELAGE (54) p. 255.
- †*Infulaster*:—*I. excentricus*; BURNET (33): FUGGER (92) p. 339: ROWE

- (235) p. 251. *I. rostratus*, enlarged range; op. cit. p. 248, 249, 256, 266, 294.
- Irregulariae* [sic] defined (p. 215) descr. (p. 247) with Orders *Holcotyp*-, *Clypeastr*-, & *Spatang-ida* (p. 248); DELAGE (54).
- Kamptosoma*; DELAGE (54) p. 224. *K. indistinctum* n. sp., Challenger Station 272 = *Phormosoma tenue*? of Chall. Rep., descr.; AGASSIZ (3) p. 110, pl. 1.
- †*Koninckocidaris*; KLEM (142) p. 74.
- Lagana decagona* Blainv. = *Laganum decagonale*; DE MEIJERE (57) p. 117.
- Laganum*; DELAGE (54) p. 254, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1381: various specific characters discussed; DE MEIJERE (57) p. 113. *L. anale* n. sp., Moluccas, 90–141 m.: op. cit. p. 129, pls. vi, xviii. *L. bonani*; FOURTAU (83) p. 423: MARTENS (185): radioles, &c.; DE MEIJERE (57) p. 114, pl. xviii. *L. conicum* n. sp., near Macassar, 450 m. (p. 120, pls. vi, xviii), *L. (Peronella) decagonale*, descr. (p. 117, pls. vi, xviii); DE MEIJERE (57). *L. decagonum*; MARTENS (185). *L. depressum*; HERDMAN (120) p. 141: radioles, position of gonopores; DE MEIJERE (57) p. 114, pls. vi, xviii: tvar. *sinaiticum*; FOURTAU (83) p. 444. *L. fragile*, *L. fudsiyama* (p. 130) *L. lesueuri* distinguished from *L. decagonale* and descr., also young, incl. *L. elongatus*, *L. rostratum*, & *Peronella rubra* (p. 122, pls. vi, xviii), *L. minutum* n. sp., Sulu Archipelago, 13–23 m. (p. 125, pls. vi, xviii); DE MEIJERE (57). *L. orbiculare*; MARTENS (185): distinguished from *L. decagonale* and descr., also young, perhaps incl. *Peronella ludwigi* Pfeffer; DE MEIJERE (57) p. 116, 126, pls. vi, xviii. *L. (Peronella) peronii* & *L. putnami* discussed (p. 116), *L. solidum* n. sp., Sulu Sea & Timor, 73–350 m. (p. 121, pl. vi); op. cit.
- †*Lambertia*; AGASSIZ (3) p. 200.
- Leocidaris pistillaris* vide sub *Cidaris baculosa*.
- †*Leiopodina tallavignesi*; DAINELLI (50): descr., incl. *Chrysomelon pictum*; DAINELLI (49) p. 193.
- †*Leiosoma*:—*L. bahezei*, *L. gourdoni*; GOURDON (102) p. 223.
- Leodia*, vide sub *Cassidulus*.
- †*Lepidechinus* defined; KLEM (142) p. 20. *L. imbricatus* descr.; op. cit. p. 21: interambulacra; AGASSIZ (3) p. 79, 80. *L. rarispinus* descr.; KLEM (142) p. 21.
- †*Lepidesthes* defined, syn. *Hybochinus*, *L. colletti* descr. (p. 24), *L. coreyi* descr. (p. 25), *L. devonicans* (p. 26), *L. formosus* descr. (p. 25), *L. laevis* (p. 27), *L. spectabilis* descr. (p. 26), *L. wortheni* descr. (p. 28); KLEM (142).
- †*Lepidesthesinae* defined with list of genera; DELAGE (54) p. 218.
- †*Lepidesthidae*; KLEM (142) p. 22.
- †*Lepidocentridae* defined; KLEM (142) p. 16.
- †*Lepidocentrus*; DELAGE (54) p. 218: defined, *L. eifelianus* descr. (p. 16), *L. muelleri* & *L. rhenanus* descr. (p. 17); KLEM (142).
- †*Lepidocentrusinae* defined with list of genera; DELAGE (54) p. 218.
- †*Lepidocidaris* defined & *L. squamosus* descr.; KLEM (142) p. 72.
- †*Leptechinus* & *L. gracilis*; KLEM (142) p. 74.
- Linopneustes*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1398: discussed; AGASSIZ (3) p. 178. *L. excentricus*; op. cit. p. 183: descr.; DE MEIJERE (57) p. 180, 240, pls. x, xxii. *L. longispinus* (p. 178–185, 204, & figg., pl. xciii, xciv), *L. murrayi* (p. 178, 183); AGASSIZ (3).
- Linthia* (v. etiam sub *Hemiaster*); DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1391: distinguished from *Schizaster* & *Periaster*; TORNQUIST (268) p. 392. †*L. aragonensis* & †*L. arizensis*; GOURDON (102) p. 219. *L. australis*; HALL (111) p. 73. †*L. bisulca*,

- +*L. cotteaudi*, +*L. dubia*, & +*L. ducrocqui* distinguished from *Hemiaster sudanensis*; BATHER (18) pp. 302, 303. +*L. heberti* (p. 218), +*L. hovelacquei* (p. 219); GOURDON (102). +*L. irregularis*; FUGGER (92) p. 339. +*L. oblonga*, Cenomanian, Sinai, descr. and figd., distinguished from *Hemiaster cubicus*; NEWTON (196). +*L. orbigny*, +*L. poblæ*; GOURDON (102) p. 219. +*L. pomeli*, +*L. sindensis*; BATHER (18) p. 302.
- Lissodiadema*; DELAGE (54) p. 232.
- Lobophora bifissa*; MARTENS (185). *L. truncata* vide *Tretodiscus bisporatus*.
- Lovenia*; DELAGE (54) p. 268: diagnosis; FOURTAU (83) p. 428: MEISSNER in HAMANN (112) p. 1400. *L. elongata*; BELL (22A): DE MEIJERE (57) p. 193: HERDMAN (120) p. 142: measurements, incl. *Spatangus crux Andree* Audouin non Lam.; FOURTAU (83) p. 429. *L. gregalis*, tubercles, young (p. 194, pl. x), *L. subcarinata* (p. 194); DE MEIJERE (57).
- Loxechinus* diagnosis; MEISSNER in HAMANN (112) p. 1369. *L. albus*; DE MEIJERE (57) p. 208, 230.
- +*Lysechinus*; DELAGE (54) p. 219: origin of interambulacra; AGASSIZ (3) p. 82.
- +*Macropneustes* diagnosis; MEISSNER in HAMANN (112) p. 1397. *M. brissoides*; DAINELLI (49) p. 195 & (50). *M. decipiens*; BASEDOW (16). *M. pulvinatus*; FUGGER (92) p. 345. *M. trutati*; GOURDON (102) p. 218.
- +*Magnosia*:—*M. decorata* (p. 169), *M. forbesi* (p. 168); LISSAJOUS (153).
- Maretia*; DELAGE (54) p. 268, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1396. *M. alta*; DE MEIJERE (57) p. 192: HERDMAN (120) p. 142. +*M. aragonensis*; GOURDON (102) p. 218. *M. planulata*; HERDMAN (120) p. 142: variation in fascioles; DE MEIJERE (57) p. 190, pl. xxiii. +*M. zeisei* incl. some specimens referred by Gagel to *Spatangus gotschei*; LAMBERT in Review of GAGEL.
- Melebosia* Girard, rejected; MORTENSEN (195) p. 75.
- Mellita* descr.; DELAGE (54) p. 255, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1384. *M. pentapora*, descr., range, young; CLARK (38) p. 565, pl. x.
- Mellitella* diagnosis; MEISSNER in HAMANN (112) p. 1384.
- +*Melonites*; DELAGE (54) p. 219, fig.: defined, synn. *Melonechinus*, *Melonechinus*; KLEM (142) p. 40: interambulacra; AGASSIZ (3) p. 80. *M. sp.* Julien, 1874, & Tornquist, 1897 (p. 44), *M. crassus* & *M. dispar* descr. (p. 41), *M. etheridgii* (p. 44), *M. irregularis* descr. (p. 41), *M. multiporus* (incl. *M. indianensis*, *M. giganteus*, & *Oligoporus sulcatus*) descr. (p. 42, pls. i–vi), *M. septenarius* descr. (p. 43); KLEM (142).
- +*Melonitesinae* defined with list of genera; DELAGE (54) p. 219.
- +*Melonitidae* defined syn. *Palaeochinidae*, *Melonechinidae*; KLEM (142) p. 27.
- Meoma*; DELAGE (54) p. 270, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1394.
- Mespilia*; DELAGE (54) p. 241. *M. globulus*, DE MEIJERE (57) p. 87: pedicellariae, &c.; MORTENSEN (195) p. 96, pl. vi, vii. *M. levituberculata* (p. 98), *M. whitmaei* syn. of *M. globulus* (p. 97); MORTENSEN (195).
- Metalia*; DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1394: diagnosis, incl. *Prometalia* & *Plagiobrissus*; FOURTAU (83) p. 430; *M. maculosa*, G. of Suez & beaches, measurements, growth-changes; op. cit. p. 431. *M. spatagus* (= *maculosa*); DE MEIJERE (57) p. 184. *M. sternalis*, young, compared with *M. robillardii* & *Xanthobrissus garetti*; op. cit. p. 185, pls. xxii, xxiii: & ? var. nov. *minor*, G. of Suez; FOURTAU (83) p. 432.

- †*Metamorphinus convexus*; DEL CAMPANA (55) p. 267.
- †*Micraster*; DELAGE (54) p. 268, fig. *M. spp.*; ROWE (235) p. 266. *M. antiquus*; ROUSSEL (234) p. 37. *M. breviporus*; COLLET (44) p. 80: FLEGEL (79). *M. brevis*; GOURDON (102) p. 217: ROUSSEL (232) p. 13, 18. *M. cf. brevis*; ROUSSEL (233) p. 29, 33. *M. coranguinum*; COLLET (44) p. 80: FUGGER (92) p. 339: HINDE (125): ROWE (235) p. 250, 251, 293: diagnosis; JUKES-BROWNE (137) p. 27. *M. corbovis*, diagnosis; op. cit. p. 22. *M. cor-columbarium*; GOURDON (102) p. 217. *M. cortestudinarium*; BURNET (33): COLLET (44) p. 80: JAHN (134) p. 81: diagnosis; JUKES-BROWNE (137) p. 26. *M. de lorioli*; JAHN (134) pp. 81, 83, 89. *M. gibbus* (?); FUGGER (92) p. 339. *M. gourdoni*; GOURDON (102) p. 217. *M. heberti*; ROUSSEL (233) p. 29, 33. *M. incanensis* [sic]; COLLET (44) p. 80. *M. leskei*; BURNET (33): diagnosis; JUKES-BROWNE (137) p. 24. *M. praecursor*; ROWE (235) p. 245, 294: diagnosis; JUKES-BROWNE (137) p. 24. *M. senonensis*; COLLET (44) p. 80. *M. testudinarum* [sic]; FUGGER (92) p. 339.
- Microcyphus*; DELAGE (54) p. 241: distinguished from *Amblypneustes*; MORTENSEN (195) p. 101. *M. annulatus* n. sp., Bass Str. 40 fm. (p. 100, pl. v, vi), *M. elegans* n. sp., Port Philip, = "*M. zigzag*" Bell 1888 (p. 99, pl. vi, vii), *M. maculatus*, pedicellariae, radioles (p. 98, pl. ii, vi, vii) & var. (p. 99), *M. rousseaui* (p. 98); MORTENSEN (195). *M. zigzag*; HALL (111) p. 71: pedicellariae, radioles, &c., incl. specimens named *Amblypneustes ovum*; MORTENSEN (195) p. 9, pl. ii.
- †*Micropsis*:—*M. frossardi*; GOURDON (102) p. 223. *M. stachei*; DAINELLI (50): cf. *M. veronensis*; DAINELLI (49) p. 192.
- Micropyga* discussed; DELAGE (54) p. 232: spicules distinct fr. *Astropyga* (p. 19), pedicellariae (p. 32, pl. iv, v); MORTENSEN (195). *M. tuberculata*, radioles, podia & spicules, pedicellariae (p. 59, pls. xiv, xv), *M. violacea*, descr. (p. 63, pls. iv, xv); DE MEIJERE (57).
- Micropygidae* n. fam. for *Micropyga*; MORTENSEN (195) p. 45.
- Micropyginae* [=preceding] defined; DELAGE (54) p. 232.
- Moira*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1392: diagnosis, its claim to the name *Schizaster* rejected, the genotype of the latter thus becoming †*S. studeri*; FOURTAU (83) p. 440. *M. sp.*, radioles, spicules; DE MEIJERE (57) p. 183: this specimen is perhaps young of *M. stygia*; AGASSIZ (3) p. 216. *M. clotho* details of test, compared with *M. atropos*; op. cit. p. 214, pl. cix. *M. stygia*, descr.; FOURTAU (83) p. 441, pl. i.
- Moiropsis* diagnosis; MEISSNER in HAMANN (112) p. 1393.
- Moulsinia* diagnosis; op. cit. p. 1385: perh. young *Encope*; DELAGE (54) p. 255.
- †*Myriastiches* & *M. gigas*; KLEM (142) p. 74.
- Nacospatangus*; AGASSIZ (3) p. 200: diagnosis; MEISSNER in HAMANN (112) p. 1398. *N. gracilis* additional details of test; AGASSIZ (3) p. 202, pl. xcvi.
- Neolampas* diagnosis; MEISSNER in HAMANN (112) p. 1387: apical system; AGASSIZ (3) p. 173, pl. lxiv. *N. rostellata*, details of test; op. cit. p. 119–121, pl. lxiv. *N. tenera*, descr.; DE MEIJERE (57) p. 146, pl. vi, xix.
- Neopneustes* diagnosis; MEISSNER in HAMANN (112) p. 1399.
- †*Noetlingia* sp.; BOULE (30).
- Nucleolites* (vide etiam *Echinobrissus*); DELAGE (54) p. 264: diagnosis; MEISSNER in HAMANN (112) p. 1385. †*N. bohemicus*; ZAHÁLKA (296) p. 18, 149.
- Nucleolitinae*; DELAGE (54) p. 263.
- †*Offaster*, vide sub *Cardiaster*.
- Oligopodia* diagnosis; MEISSNER in HAMANN (112) p. 1386.
- †*Oligoporus* defined (p. 37), *O. coreyi* descr. (p. 38), *O. danae* descr. (p. 37),

- O. minutus* (p. 40); KLEM (142). *O. missouriensis* descr.; KLEM (142) p. 38: interambulacral; AGASSIZ (3) p. 79, 80. *O. mutatus*, *O. nobilis* (p. 39), *O. parvus* (p. 40), all descr.; KLEM (142). *O. soreili* n. sp. Visean, Belgium; FRAIPONT (85) p. 10, pls. iii, iv, v.
- Opechinus*; DELAGE (54) p. 240: maintained for *Pleurechinus variabilis* Doed. & *O. rousseaui*, *hookeri*, *costatus*, *tuberculosus*, *valenciennesi*, *percultus*, *affinis*, all Tertiary, India; MORTENSEN (195) p. 92. *O. spectabilis* n. sp., Kei Is., New Guinea, 129 fm., is the *Temnopleurus hardwicki* of Challenger Rep. p. 107 (p. 94, pl. i, v-vii), *O. variabilis*, pedicellariae, spicules, &c. (p. 94, pl. vi, vii); MORTENSEN (195).
- †*Oppenheimia*; DELAGE (54) p. 268.
- †*Oriolampas* (v. etiam sub *Plesiolampas*):—*O. lorioli*; GOURDON (102) p. 221.
- Orthopsidae* Greg., criticised; MORTENSEN (195) p. 44.
- †*Orthopsis miliaris*; ROUSSEL (232) p. 15 & (233) pp. 28, 36.
- †*Palaeochinus* defined, syn. *Typhlechinus* (p. 31), *P. sp.* Julien, 1874, & *P. sp.* Mitchell, 1897 (p. 36), *P. sp.* Tornquist 1897 (p. 37), *P. ellipticus* descr. (p. 31), *P. gigas* descr. (p. 32); KLEM (142). *P. globosus*; PEACH (209) p. 842. *P. intermedius* descr., *P. konincki* [i.e. *koenigi* McCoy, confused with *konincki* Julien], descr.; KLEM (142) p. 33. *P. konincki* (p. 9, pl. iii), *P. lacazei* (p. 9, pls. i, ii); FRAIPONT (85): descr.; KLEM (142) p. 34. *P. paradoxus*, *P. phillipsiae* (p. 35), *P. robineti*, *P. rutoti* (p. 36), *P. sphericus*, descr. (p. 34); KLEM (142).
- †*Palechinida* defined with Suborders *Bothriocidaridae*, *Cystocidaridae*, & *Perischoechinidae*; DELAGE (54) p. 216.
- †*Palaeëchinoida* as Sub-class, principles of classification, divided into Orders, A. *Cystocidaroida* with Famm. *Palaeodiscidae* & *Echinocystidae*, B. *Bothriocidaroida* with Fam. *Bothriocidaris*, C. *Perischoëchinoida* with Famm. *Lepidocentr-*, *Lepidesth-*, *Melonit-*, & *Archaeocidaridae*; KLEM (142).
- Palaeobrissus* (sen *-bryssus*) (vide etiam sub *Argopatagus*); DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (112) p. 1390: ambulacral & apical system; AGASSIZ (3) p. 174.
- †*Palaeodiscidae* defined; KLEM (142) p. 12.
- †*Palaeodiscus* descr.; DELAGE (54) p. 218: defined, & *P. ferox*, descr.; KLEM (142) p. 12: anatomy; SPENCER (264).
- Palaeolampas crassa*; BELI (22A).
- †*Palaeopedina*? sp.; LAMBERT (148) p. 543, pl. xviii.
- Paleopneustes* descr.; DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (p. 112) p. 1389: discussed; DE MEIJERE (57) p. 240 & AGASSIZ (3) p. 178. *P. cristatus*; op. cit. p. 178, 180, 183, & figg., pl. xcv, xcvi. *P. fragilis*; op. cit. p. 183: descr.; DE MEIJERE (57) p. 175, 240, pls. ix, xxi, xxii. *P. hemingi* (p. 182), *P. hystrix* details of test, is not to be separated as *Archaeopneustes* (p. 179-186, & figg., pl. xcvi); AGASSIZ (3). *P. spectabilis*; op. cit. p. 180, 183: descr.; DE MEIJERE (57) p. 172, 240, pls. viii, xxi.
- Paleopneustidae*, as sub-fam. [of *Spatangidae*] incl. *Paleopneustes*, *Lino-*
pneustes, *Homolampas*, *Phrissocystis*, *Argopatagus*, *Genicopatagus*,
Palaeotropus, & *Palaeobrissus* (p. 131), as fam. of "Ananchytid
Spatangoids" (p. 150); AGASSIZ (3).
- Palaeostoma* descr.; DELAGE (54) p. 272: diagnosis; MEISSNER in HAMANN (112) p. 1402. *P. mirabile*; DE MEIJERE (57) p. 172.
- Palaeotropus* (v. etiam sub *Argopatagus*); DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1401. *P. hironellei* distinctive characters (p. 170), *P. josephinae* (p. 171, figg.); AGASSIZ (3). *P. loveni*; DE MEIJERE (57) p. 200: redescr.; AGASSIZ (3) p. 168, pl. lxxxvii.
- Parabrissus*; AGASSIZ (3) p. 200.

- Paracentrotus* descr. ; DELAGE (54) p. 243, fig. : diagnosis ; MEISSNER in HAMANN (112) p. 1370. *P. lividus* ; DELAGE (54) p. 243.
- Parasalenia* descr. ; DELAGE (54) p. 245 : diagnosis ; MEISSNER in HAMANN (112) p. 1375. *P. gratiosa*, compared with *P. pöhlui*, pedicellariae ; DE MEIJERE (57) p. 97, pl. xvii : pedicellariae, incl. *P. pöhlui*, young, specimen recorded from Zanzibar, Bell 1903, is *Stomopneustes variolaris* ; MORTENSEN (195) p. 121, pl. v.
- Parasaleninae* ; DELAGE (54) p. 245.
- Paraster* discussed ; FOURTAU (83) p. 435.
- Parachininae* ; DELAGE (54) p. 242.
- Parechinus* descr. ; loc. cit., figg. : diagnosis ; MEISSNER in HAMANN (112) p. 1368. *P. microtuberculatus*, *P. miliaris* ; DELAGE (54) p. 242.
- +*Pedina* ; DELAGE (54) p. 233. *P. arenata* (p. 170), *P. gigas* (p. 169) ; LISSAJOUS (153). *P. lithographica* ; WALTHER (281) p. 167. *P. sublaevis* ; MAIRE (178) : LISSAJOUS (153) p. 169 : not typical form ; LAMBERT in Review.
- Pedinidae* should include *Pedina*, *Caeno-*, *Pseudo-*, *Micro-*, *Leio-*, *Echino-*, *Hemi-*, *Phymo-*, & *Palaeo-pedina*, *Mesodiadema*, *Echinopsis*, *Diademopsis*, *Hecistocyphus*, *Orthopsis*, *Miorthopsis*, *Gymnodiadema* ; MORTENSEN (195) p. 46.
- Pedininae* defined with list of genera ; DELAGE (54) p. 233.
- +*Pedinothuria* ; DELAGE (54) p. 235 : referred to *Pseudodiadematidae* ; MORTENSEN (195) p. 52.
- +*Pelanechinus* descr. ; DELAGE (54) p. 224.
- +*Peltastes* :—*P. clathratus* ; COLLET (44) p. 77. *P. stellulatus* ; STRANGWAYS (266). *P. aff. stellulatus* ; ZLATARSKI (299). *Peltaster* [sic] *umbrella* ; FORTIN (81).
- Periaster* ; DELAGE (54) p. 271 : distinguished ; TORNQUIST (268) p. 392. *P. limicola* not this genus ; loc. cit. : of Challenger Rep. pl. xxxv6, f. 1–4 is not this sp. ; AGASSIZ (3) p. 210. +*P. oblongus* vide sub *Linthia*. *P. tenuis* descr., compared with *P. limicola* & *Hemiaster bufo* ; AGASSIZ (3) p. 209, pls. ciii–cv.
- Peripatagus*,—*Perypatagus* [sic] ; DELAGE (54) p. 271 : diagnosis ; MEISSNER in HAMANN (112) p. 1391.
- +*Perischodomus* defined, synm. *Perischocidaris*, *Homotoechus*, *Tretechinus* (p. 18), *P. biserialis* descr. (p. 18), *P. hartei* descr. (p. 19), *P. illinoensis* descr., *P. magnus* (p. 20) ; KLEM (142).
- +*Perischoechinidae* defined as Suborder with Famm. *Lepidocentrus*, *Lepidesthes*, *Archaeocidaris*, *Melonites*, & *Tiarechinus*-inae ; DELAGE (54) p. 217, 218.
- +*Perischoechinoida* defined ; KLEM (142) p. 15.
- +*Permocidaris* ; KLEM (142) p. 74.
- Peronella* discussed, merged in *Laganum* (q. v.), *P. pellucida* ; DE MEIJERE (57) p. 130.
- +*Peroniaster nasutus*, vide sub *Hemiaster*.
- Petalocidaris* vide sub *Cidaris* ; DELAGE (54) p. 227 : rejected ; AGASSIZ (3) p. 22.
- +*Pholidocidaris* defined (p. 22), *P. gaudryi* (p. 23), *P. irregularis* incl. *P. meeki*, descr. (p. 22), *P. tenuis* (p. 23) ; KLEM (142).
- Phormosoma* descr. ; DELAGE (54) p. 221 & fig. *P. sp.* ; BELL (22A). *P. sp.* (p. 32, pl. xii), *P. alternans* descr. (p. 31, pls. iii, xii), *P. bursarium*, young individuals, discussion of Agassiz' figures of young *Phormosoma* (p. 28) ; DE MEIJERE (57). *P. hispidum* descr., growth changes (p. 86, pls. A, B, xxx–xlix, also p. 76–79), *P. panamense* descr. (p. 101, figg.) ; AGASSIZ (3). *P. placenta* juv. descr. ; op. cit. p. 100, pls. xliii, xlvi : proechinus stage ; MORTENSEN (195) p. 54, fig. *P. verticillatum* n. sp., B. of Bengal, 678 fm. ; MORTENSEN (194) p. 90, pl. iv, v. *P. zealandiae* n. sp., Challenger Station 169 = *Asthenosoma gracile* ? of Chall. Rep. ; AGASSIZ (3) p. 105, pl. li.

- Phrissocystis* (v. etiam sub *Argopatagus*) ; DELAGE (54) p. 273 : diagnosis ; MEISSNER in HAMANN (112) p. 1403 : discussed ; AGASSIZ (3) p. 186.
P. aculeata descr. ; op. cit. p. 187, pls. lxxx-xc. *P. humilis* descr. ; DE MEIJERE (57) p. 198, pls. x, xxiii : criticised ; AGASSIZ (3) p. 187.
- Phyllacanthus* (v. etiam sub *Cidaris*) ; DELAGE (54) p. 227. *P. australis* ; DE MEIJERE (57) p. 12. *P. baculosa* (p. 138). *P. imperialis* (p. 139) ; HERDMAN (120).
- + *Phymosoma*, vide sub *Cyphosoma*.
- Pilematechinus* n. g. of *Urechinidae* for *Cystechinus rathbuni* A. Ag. genotype and *C. vesica* A. Ag. (p. 163), *P. rathbuni* descr. (p. 165, pls. lxxxi-lxxxvi, also p. 122, 124, 130) ; AGASSIZ (3).
- Plagiobrissus*, vide *Metalia*.
- Platybrissus* (seu *-bryssus*) ; DELAGE (54) p. 273 : diagnosis ; MEISSNER in HAMANN (112) p. 1388.
- Plesianthus*, diagnosis ; MEISSNER in HAMANN (112) p. 1382.
- Plesiadiadema* Pomel, rejected in favour of *Dermatodiadema* A. Ag. ; AGASSIZ (3) p. 59 : replaces *Dermatodiadema* (q. v.) ; MORTENSEN (195) p. 38.
- + *Plesiolampas* discussed ; BATHER (18) p. 292 : probably not to be separated from *Oriolampas* ; LAMBERT in Review. *P. saharæ* n. sp., Eocene, Garadimi & Tamaské in Sokoto ; BATHER (18) p. 293 & figg., pl. xi : see also OPPENHEIM (201) p. 253, 283.
- Plesiozonus* ; DELAGE (54) p. 273 : diagnosis ; DE MEIJERE (57) p. 177 & MEISSNER in HAMANN (112) p. 1389 : discussed ; AGASSIZ (3) p. 183.
P. hirsutus, descr. ; DE MEIJERE (57) p. 178, 240, pls. vii, xxii.
- Pleurechinus* ; DELAGE (54) p. 241 : distinguished fr. *Temnopleurus* ; MORTENSEN (195) p. 91. *P. bothryoides*, descr., probably incl. *Temnopleurus toreumaticus*? juv. Sladen 1879, and *Temnechinus scillae* Mazzetti 1894 ; DE MEIJERE (57) p. 77, pl. xvi, but see p. 202 : holotype descr., pedicellariae, spicules, &c. ; MORTENSEN (195) p. 83, pls. vi, vii. *P. doederleini* n. sp., G. of Siam, 5-9 fm. ; op. cit. p. 77, pls. i, ii, vi, vii. *P. maculatus* n. sp., Macclesfield Bank, = "*Temnopleurus bothryoides*" Bell, and other Indo-Pacific locc. ; op. cit. p. 89, pl. i : also with *P. reticulatus* n. sp. ; MORTENSEN in DE MEIJERE (57) p. 202, 228. *P. ruber*, maintained (p. 82), pedicellariae, &c. (p. 84, pl. vi, vii), *P. scillae* (Mazzetti sub *Temnechinus*) holotype examined, species redescri., incl. *P. reticulatus* Mrtnsn in Meijere (p. 86, pls. i, ii, vi, vii) ; MORTENSEN (195). *P. siamensis* n. sp., G. of Siam, 3-38 fm., and other Indo-Pacific locc., n. var. *pulchellus*, Amirante and Maldive Is. ; op. cit. p. 79, pls. i, ii, vi, vii : also MORTENSEN in DE MEIJERE (57) pp. 202, 228. *P. variabilis* ; DE MEIJERE (57) p. 79, 202 : these specimens are partly *Genocidaris* sp. nondescr. (p. 94), but the species is an *Opechinus* (p. 82), *P. variegatus* n. sp., Formosa Channel and Japanese Seas (p. 84, pls. i, ii) ; MORTENSEN (195).
- Plexechinus* ; DELAGE (54) p. 267 : diagnosis ; MEISSNER in HAMANN (112) p. 1405 : discussed, compared with *Urechinus* et al. ; AGASSIZ (3) p. 148. *P. cinctus*, descr. ; op. cit. p. 150, pls. lv, lviii-lx, also p. 130.
- Podocidaris* ; DELAGE (54) p. 237. *P.* sp., young, compared with *P. prionigera* and *P. sculpta* ; DE MEIJERE (57) p. 68, pl. xvi.
- Porocidaris* ; DELAGE (54) p. 228, fig. : discussed ; AGASSIZ (3) p. 24.
P. cobosi, shape of test (p. 1, f. 4), size of actinal system (p. 3, f. 13), anal plates in young (p. 6, f. 20, 21), growth of coronal plates (p. 11, f. 30-42), descr. and discussed (p. 29, pls. ix-xiii) ; AGASSIZ (3).
P. maculicollis, vide *Cidaris*. *P. milleri* ; DE MEIJERE (57) p. 27 : shape of test (p. 1, f. 6), growth of ambulacrals (p. 2, f. 7-10), size of actinal system (p. 3, f. 11) anal plates in young (p. 5, f. 16-19), descr. and discussed (p. 25, pls. vi-viii, x) ; AGASSIZ (3). + *P. pseudoserrata* ; CHECHIA (37). + *P. schmideli* ; DAINELLI (49) p. 192, & (50).
- Pourtalesia*, descr. ; DELAGE (54) p. 266, figg. : diagnosis ; MEISSNER in

- HAMANN (112) p. 1405 : suggested sections, (a) typical for *P. miranda*, *tanneri*, *laguncula*, & *jeffreysi*, (b) *P. phiale*, (c) *P. ceratopyga* & *rosea*, (d) *P. hispida* (p. 141); AGASSIZ (3). *P. carinata*; BELL (22A): actinal area (p. 127, 128), ditto of *P. ceratopyga* (p. 128) & of *P. hispida* (p. 128, 129); AGASSIZ (3). *P. jeffreysi*, distrib.; GRIEG (106) p. 14: measurements, slight variations; MICHAÏLOVSKIJ (192) p. 163, 184, fig.: actinal area, anal, and apical systems; AGASSIZ (3) p. 126, 128, 129, 134, 135, 137, 138. *P. laguncula*, radioles; DE MEIJERE (57) p. 171, pl. xxi: actinal area; AGASSIZ (3) p. 129, 135. *P. miranda*, older individuals descr. (p. 139, fig.), *P. phiale*, actinal area (p. 129), *P. tanneri*, descr. (p. 132, pls. B, lv-lvii, also p. 125-129); AGASSIZ (3).
- Pourtalesiae* A. Ag., morphology of test (p. 121-132), suggested exclusion of *Urechinidae* & *Paleopneustidae*, and limitation to *Pourtalesia*, *Echinocrepis*, *Spatagocystis*, *Plexechinus*, & *Sternopatagus* (p. 131); AGASSIZ (3).
- Pourtalesidae*, fully discussed; DE MEIJERE (57) p. 157-171.
- †*Prenaster alpinus*; FUGGER (92) p. 339: GOURDON (102) p. 220.
- Prionechinus*, discussed; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *P. forbesianus*, descr. (p. 71, pls. iv, xvi), *P. sagittiger*, descr. (p. 70, pl. xvi); DE MEIJERE (57).
- †*Procidaris*; DELAGE (54) p. 228.
- Progonolampas*; DELAGE (54) p. 265.
- Prometalia* vide *Metalia*.
- †*Proterocidaris* & *P. giganteus*; KLEM (142) p. 74.
- †*Protocidaris*; KLEM (142) p. 75: perh. young *Echinocystis*; DELAGE (54) p. 217. *P. acuaria*; KLEM (142) p. 75.
- †*Protoechinus* & *P. anceps*; KLEM (142) p. 75.
- Psammechinus* descr.; DELAGE (54) p. 243: diagnosis; MEISSNER in HAMANN (112) p. 1371. †*P. dubius*; DOUXAMI (69) p. 561: descr., distrib.; SCHUETZE (251) p. 166, pl. iii. †*P. gilleroni*; ZLATARSKI (299). *P. microtuberculatus*; PARONA (207) p. 384: vide etiam sub *Parechinus*. *P. miliaris*; FUEHNER (89) & (90): GARBOWSKI (94): †determined by T. MORTENSEN; PETERSEN (215) p. 81: vide etiam sub *Parechinus*. †*P. peroni*; COUFFON (46) p. 41. *P. rufus* (Bell sub *Salmacis*) incl. *Gymnechinus pumilio*; MORTENSEN (195) p. 122, pl. v, vii. *P. variegatus*; DELAGE (54) p. 243. *P. verruculatus*, colour; MORTENSEN (195) p. 123: pedicellariae; DE MEIJERE (57) p. 88, pl. xvii.
- †*Pseudasterostoma* discussed; DE MEIJERE (57) p. 242.
- Pseudechinus* descr.; DELAGE (54) p. 246, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1375: rejected; LORIOLO (162) p. 20.
- Pseudoboletia*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1373. *P. indiana* syn. of *P. maculata*; DE MEIJERE (57) p. 208. *P. maculata*; HERDMAN (120) p. 139: pedicellariae; DE MEIJERE (57) p. 96, pl. xvii.
- Pseudocentrotus*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1373.
- †*Pseudocidaris clunifera*; ZLATARSKI (299).
- †*Pseudodiadema*; DELAGE (54) p. 235: distinct from *Diadema*; MORTENSEN (195) p. 47. *P. aspera*; WALTHER (281) p. 167. *P. bourgueti*; KARAKASCH (138) p. 15. *P. brongniarti*, distinguished from *P. variolare*; JUKES-BROWNE (137) p. 455. *P. conforme*; LISSAJOUS (153) p. 161. *P. depressum*; op. cit. p. 159: STRANGWAYS (266) p. 15: ?; CLERC (42) p. 99. *P. inaequale*, compared with *P. wrighti*, a deformity; LISSAJOUS (153) p. 159. *P. jauberti* Cott. is *Hessotiarra*; LAMBERT (148) p. 543. *P. jobae*; LISSAJOUS (153) p. 159. *P. mackiei*, maintained; JUKES-BROWNE (137) p. 456. *P. mamillanum* (p. 162),

- P. neglectum* (p. 161); LISSAJOUS (153). *P. pentagonum*; CLERC (42) p. 100; STRANGWAYS (266) p. 23. *P. primaevum* n. sp., Hettangian of Vendée; LAMBERT (148) p. 540, pl. xviii. *P. princeps*, *P. priscum* (p. 161), *P. subcomplanatum* (p. 159), *P. superbum*, with a swelling (p. 160, pl. ii); LISSAJOUS (153). *P. vagans*; STRANGWAYS (266) p. 15, 23. *P. variolare*; WOLLEMAN (290). *P. versipora*; STRANGWAYS (266) p. 40, 54, 59. *P. wrighti*; LISSAJOUS (153) p. 159.
- †*Pseudodiadematinæ* doubtfully accepted; MORTENSEN (195) p. 46.
- †*Pseudodiadematinæ*, with list of genera; DELAGE (54) p. 234.
- †*Pseudopedina divionensis*?; LISSAJOUS (153) p. 170.
- †*Pseudosalenia cuevasensis* n. sp., Lower Cretaceous, Honduras; LORIOI (162) p. 57, pl. iv.
- †*Pygaster*:—*P. semisulcatus*; STRANGWAYS (266) p. 9; LISSAJOUS (153) p. 172. *P. trigeri*; op. cit. p. 173.
- Pygastrides* diagnosis; MEISSNER in HAMANN (112) p. 1379.
- †*Pygorhynchus aragonensis*; GOURDON (102) p. 221.
- †*Pygurus*:—*P. depressus* incl. *P. michelini*; LISSAJOUS (153) p. 177. *P. pentagonalis*; STRANGWAYS (266) p. 40, 49. *P. royeri*; LISSAJOUS (153) p. 177.
- †*Pyrina*:—*P. carinata*; FUGGER (92) p. 339; *P. freucheni*; TÖRNEBOHM (267) p. 143. *P. guerangeri*; LISSAJOUS (153) p. 174: this is a *Menopygus* (*Pyrinodia*); LAMBERT in Review. *P. ovulum*; ROUSSEL (232) p. 15 & (233) p. 28. *P. parryi*; RICHARDSON (227) p. 48. *P. petrocoriensis*; ROUSSEL (232) p. 15 & (233) pp. 28, 36.
- Ravenellia*; DELAGE (54) p. 255.
- Regularia* [sic] defined, with Orders *Palechin*-, *Echinothur*-, *Cidar*-, & *Diadem-ida*; DELAGE (54) p. 215.
- Rhabdобрissus* (seu- *bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1398.
- Rhabdocidaris*; DELAGE (54) p. 228: diagnosed, and adopted in sense of de LorioI 1882; FOURTAU (83) p. 409. *R. annulifera*, vide sub *Cidaris bispinosa*, *baculosa*. *R. baculosa*, G. of Suez, also †near Suez; FOURTAU (83) p. 410. †*R. caprimontana*; SIEMIRADZKI (255) p. 141. †*R. delgadoi* LorioI 1887 non 1889, radioles descr.; LORIOI (162) p. 65, pl. iv. †*R. heuvelini*, distinguished from *R. ferryi*; LAMBERT in Review of LISSAJOUS (153). *R. imperialis* incl. *R. dubia*, G. of Suez also †at entrance of gulf; FOURTAU (83) p. 411. †*R. maxima*; STRANGWAYS (266) p. 15 & fig. †*R. nobilis*; SIEMIRADZKI (255) p. 141. †*R. phillipsi*; STRANGWAYS (266) p. 59. †*R. pouechi*; GOURDON (102) p. 222. †*R. remus*, †*R. suevica*; SIEMIRADZKI (255) p. 141.
- Rhinobryssus*, diagnosis; MEISSNER in HAMANN (112) p. 1395.
- †*Rhoechinus* defined (p. 27), *R.* sp. Duncan 1889 (p. 30), *R. burlingtonensis* descr. (p. 27); KLEM (142). *R. elegans*; FRAIPONT (85) p. 10, pl. ii: descr.; KLEM (142) p. 28. *R. gracilis* (p. 29), *R. irregularis*, *R. quadriserialis* (p. 30), all descr.; KLEM (142).
- Rhynchopygus*, diagnosis; MEISSNER in HAMANN (112) p. 1386. *R. caribæarum*, details of text; AGASSIZ (3) p. 119, figg. †*R. marmini*; TÖRNEBOHM (267) p. 136. *R. pacificus*, ambulacra; AGASSIZ (3) p. 118, 121.
- Rotula* descr.; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1384.
- Rumphia orbicularis*; MARTENS (185).
- Salenia* descr.; DELAGE (54) p. 235, fig. †*S. areolata*; TÖRNEBOHM (267) p. 136. †*S. bourgeoisii*; ROUSSEL (232) p. 15 & (233) pp. 28, 36. †*S. colleti*, Lambert's description quoted; COLLET (44) p. 64, pl. ii. *S. goesiana*, discussed; AGASSIZ (3) p. 36. †*S. granulosa*; ROWE (235) p. 241, 252, 256, 293. *S. hastigera*; AGASSIZ (3) p. 37, pl. xx: radioles; DE MEIJERE (57) p. 43. *S. miliaris* descr., growth-stages; AGASSIZ

- (3) p. 36, 41, pls. xiv-xx. *S. pattersoni*, structural details; op. cit. p. 37, 46, pl. xx: radioles, colour, &c.; DE MEIJERE (57) p. 43.
- S. varispina*, holotype very young, redescr. (p. 35, pl. xxi), comparison with *S. miliaris* (p. 45 et sqq. & figg.); AGASSIZ (3).
- Salenidae*, relations to *Cidaridae* & *Echinidae*; AGASSIZ (3) p. 34: brief systematic account; FRITEL (86).
- Saleniinae* defined with list of genera; DELAGE (54) p. 235.
- Salenina* defined with Fam. *Saleniinae*; DELAGE (54) p. 235.
- Salmacis*; DELAGE (54) p. 241: distinguished from *Temnopleurus*; MORTENSEN (195) p. 76. *S. bicolor*; DE MEIJERE (57) p. 85, 203: HERDMAN (120) p. 140: & var. *rarisipina*, pedicellariae & spicules, incl. *S. globatrix*, but excl. various specimens placed here by authors; MORTENSEN (195) p. 65, pls. vi, vii. *S. desmoulinsi* Dujardin & Hupé, err. typ. pro *S. dussumieri*; op. cit. p. 74. *S. dussumieri*; HERDMAN (120) p. 140: radioles, pedicellariae, & young; DE MEIJERE (57) p. 85: spicules; MORTENSEN (195) p. 72, pl. vii. *S. elegans* Bell 1899 is *Coelopleurus mailhardi*; DE MEIJERE (57) p. 68 & MORTENSEN (195) p. 74. *S. globator*; l. c. *S. rarisipina*, descr., also young; DE MEIJERE (57) p. 83, pl. v: holotype examined, not specifically distinct fr. *S. bicolor*; MORTENSEN (195) p. 67. *S. rubrotinctus*; op. cit. p. 74. *S. rufa* Bell, incl. *Gymnechinus pumilio* (q. v.), & is probably *Psammecchinus* (q. v.); DE MEIJERE (57) p. 203. *S. sphaeroides*, radioles, pedicellariae, & young; op. cit. p. 82, pl. xvii: incl. *S. sulcata* Ag. & Des., pedicellariae, spicules, buccal membrane, also var. *pyramidata*, but var. *belli* is distinct sp.; MORTENSEN (195) p. 70, pls. v, vi: var. *belli*; DE MEIJERE (57) p. 203. *S. sulcata*; HERDMAN (120) p. 140: Auctt., synn. of various spp.; MORTENSEN (195) p. 74. *S. varius*; l. c. *S. virgulata*, holotype examined, pedicellariae, spicules, incl. *S. conica*, & var. *alexandri*; MORTENSEN (195) p. 68, pls. vi, vii: radioles, pedicellariae (p. 83, pl. xvii), var. *alexandri* (p. 202); DE MEIJERE (57). *S. woodsi*, probably a monstrosity; MORTENSEN (195) p. 74.
- Salmacopsis*; DELAGE (54) p. 241. *S. olivacea*, pedicellariae &c.; MORTENSEN (195) p. 96, pl. vi, vii.
- Schizaster* descr.; DELAGE (54) p. 270, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1392, & FOURTAU (83) p. 433 (vide etiam sub *Moiria*): list of spp. according to apical system, distinguished from other genera, esp. *Linthia*; TORNQUIST (268). †*Schizaster* sp. (= *scillae* Desor); SCHUETZE (251) p. 185. †*S. abductus*; BASEDOW (16). †*S. acuminatus*; TORNQUIST (268) p. 383. *S. canaliculata*; AGASSIZ (3) p. 207, fig. *S. canaliferus*; TORNQUIST (268) p. 376, pl. †*S. aff. degrangei*; GOURDON (102) p. 220. *S. fragilis*; AGASSIZ (3) p. 207, fig.: BELL (22A): TORNQUIST (268) p. 375, pl.: measured; MICHAÏLOVSKIJ (192) p. 163. *S. gibberulus*; HERDMAN (120) p. 142: L. Ag.'s holotype now destroyed was the specimen figd. by Savigny, pl. vii, f. 5, not f. 6; FOURTAU (83) p. 434, fig. †*S. globulus*; DAINELLI (49) p. 195 & (50). †*S. howa* nondum descr.; TORNQUIST (268) p. 378, pl. [Tornquist refers to a paper by himself at press in Abh. Senckenberg. Nat. Ges. 1904. So far I have been unable to see, borrow, or buy this]. *S. japonicus*, radioles, spicules; DE MEIJERE (57) p. 183, pl. xxii. †*S. lacunosus*; BELLINI (23) p. 5. *S. latifrons* descr., young; AGASSIZ (3) p. 205, pl. ci. *S. limicola*; MARTENS (185). †*S. major*; PATRINI (208). *S. philippii*; AGASSIZ (3) p. 206, figg. †*S. rousseli*; GOURDON (102) p. 220. *S. savignyi* n. sp. pro *S. gibberulus* A. Ag. non L. Ag., Savigny pl. vii, f. 6, G. of Suez (p. 436, pl. i, & fig.) var. nov. *major*, Bay of Mirsa Thlemel (p. 439, pl. i), types in Mus. hist. nat. Paris; FOURTAU (83). †*S. spado*; TORNQUIST (268) p. 387, pl. *S. townsendi* descr., young; AGASSIZ (3) p. 207, pls. c, ci. †*S. vicinalis*; GOURDON (102) p. 219.
- Schizochininae*; DELAGE (54) p. 244.

- Schizocidaris*; DELAGE (54) p. 228.
- †*Scutella* descr.; DELAGE (54) p. 254. *S. aberti*; CLARK (39) p. 432, pls. cxix, cxx. *S. deflersi*; BARRON (15) p. 607. *S. helvetica*; SCHUETZE (251) p. 172. *S. interlineata*; HAEHL (110) p. 24. *S. cf. paulensis*, descr., distrib. of sp.; SCHUETZE (251) p. 170, pl. iv. *S. striatula*, single specimen in coll. M. de Serres, from l'Hérault, is same as *S. ja[c]quemeti* Lor., which name should be used?; LORIOI (162) p. 67.
- Scutellinae* defined with list of genera; DELAGE (54) p. 254.
- Selenechinus*; DELAGE (54) p. 246: n.g. of *Echinometridae*, not diagnosed, but with genotype *S. armatus* n. sp., Sulu Sea?, compared with *Heliocidaris* & *Pseudechinus*; DE MEIJERE (57) p. 99, pls. v, xvii.
- Spatangida* defined (p. 248) descr. (p. 256) with Famm. *Cassidul*-, *Holaster*-, & *Spatang*-inae (p. 263); DELAGE (54).
- Spatangidae*, vide *Eobriissus*.
- Spatanginae* defined with list of genera in groups *Prymnodesminae*, *Prymnadetiinae*, *Adetiinae*; DELAGE (54) p. 267.
- Spatagocystis*; l. c.: diagnosis; MEISSNER in HAMANN (112) p. 1405. *S. challengeri*, additional details from an undescribed Challenger specimen; AGASSIZ (3) p. 141, pls. lxx, lxxi also p. 122, 123, 127, 128, 130.
- Spatagodesma*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1406: compared with *Agassizia* (p. 198), apical system (p. 173, f. 289, pl. cvi). *S. diomedae* descr. (p. 200, pls. cvi, cvii); AGASSIZ (3).
- †*Spatangopsis*, & *S. costata*; KLEM (142) p. 75.
- Spatangus* descr.; DELAGE (54) p. 267, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1396. †*S. delphinus*; DOUXAMI (69) p. 561: descr., distinguished from *S. desmaresti*, comparative measurements, distrib.; SCHUETZE (251) p. 181, pl. v: differs from Burdigalian type; LAMBERT in Review. †*S. deydiert*; DOUXAMI (69) p. 561. †*S. gottschei* Gage is a *Marelia*; LAMBERT in Review of GAGEL. †*S. ocellatus*; SCHUETZE (251) p. 185. †*S. prunella*; LAMBERT (147) p. 21, 22. *S. purpureus*; CLERC (41): HENRI (116) p. 13: MAR. BIOL. ASS. (184) p. 211. *S. raschi*; BELL (22A).
- Sperosoma* descr.; DELAGE (54) p. 224, fig.: origin of ambulacrals; AGASSIZ (3) p. 81. *S. quincunciale* n. sp., S. of Timor, 883 m.; DE MEIJERE (57) p. 40, pl. xiii.
- Sphaerechinus* descr.; DELAGE (54) p. 244, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1373. *S. australiae* is young of *Pseudoboletia maculata*; DE MEIJERE (57) p. 208. *S. granularis*; DI MAURO (63): HENRI (116) p. 13: HERBST (117): VIGUIER (277).
- †*Spilecia*, placed in *Arbaciinae*; DELAGE (54) p. 238.
- Stegaster*; DE MEIJERE (57) p. 170.
- †*Stenomia* discussed; DE MEIJERE (57) p. 242.
- Stephanocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 228. *S. bispinosa*; HERDMAN (120) p. 138: incl. *Cidaris luetkeni*, holotypes examined, descr., young; MORTENSEN (195) p. 6, pl. iii-v.
- Sterechinus*; DELAGE (54) p. 243: diagnosis; MEISSNER in HAMANN (112) p. 1370: discussed and restricted to *S. antarcticus*; LORIOI (162) p. 16. *S. magellanicus*; DE MEIJERE (57) p. 208.
- Stereocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 227, fig.: cause of absence of apical radioles; DE MEIJERE (57) p. 6. *S. canaliculata* (p. 691), *S. nutrix* (p. 690); LUDWIG (164). †*S. sceptrifera*; WOLLEMAN (289).
- Stereopneustes*; DELAGE (54) p. 265: diagnosis; MEISSNER in HAMANN (112) p. 1403: diagnosis (p. 147) compared with *Urechininae* (p. 151) & *Echinocorytidae* (p. 152), *S. relictus*, described (p. 148, 239, pls. v, xix, xx); DE MEIJERE (57).
- Sternopatagus*; DELAGE (54) p. 267: discussed; AGASSIZ (3) p. 131:

- diagnosis; MEISSNER in HAMANN (112) p. 1404: diagnosis (p. 154) systematic position discussed (p. 160), *S. sibogae* descr. (p. 155, 239, pls. vii, xx, xxi); DE MEIJERE (57).
- †*Stirechinus suevicus* n. sp., Helvetian, Bryozoa sand of Ursendorf, Suabia; SCHUETZE (251) p. 169, pl. iii.
- "Stomechinien" Pomel, discussed; DELAGE (54) p. 238.
- †*Stomechinus*:—*S.* spp. nondescr.; WELSCH (283) p. 27. *S. aroviensis*; SIEMIRADZKI (255) p. 141. *S. germinans*; LISSAJOUS (153) p. 170. *S. perlatus*; WALTHER (281) p. 167. Ditto?, *S. serratus*, *S. sulcatus*; LISSAJOUS (153) p. 171.
- Stomopneustes* descr.; DELAGE (54) p. 241. *S. variolaris*; DE MEIJERE (57) p. 87; HERDMAN (120) p. 139.
- Stomopneustesinae* defined with list of genera; DELAGE (54) p. 241.
- Stomopneustidae* maintained; MORTENSEN (195) p. 47.
- Strongylocentrotinae*; DELAGE (54) p. 245.
- Strongylocentrotus* descr.; DELAGE (54) p. 245, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1374. *S. drobachiensis*; BERTRAND (27): KIAER (140): MICHAILOVSKIJ (192) p. 162: descr., range; CLARK (38) p. 563, pl. ix. *S. erythrogrammus*; HALL (111) p. 71. *S. lividus*; +ACLAND (2): see II, c, vii; BERTOLO (26): DI MAURO (63): DUBUISSON (73): FUEHNER (90): HENRI (116) p. 11–13: HERBST (117) & (119): NOBRE (198) p. 55 & (199): PETRUNKEWITSCH (217): VIGUIER (277): ZIEGLER (298): vide etiam sub *Paracentrotus*. *S. purpuratus*; LOEB (155, 156, 158, 159).
- Studeria* diagnosis; MEISSNER in HAMANN (112) p. 1387.
- Temnechininae*, sub-fam. of *Temnopleuridae* (q. v.) replaces *Trigonocidarinae*; MORTENSEN (195) p. 112.
- Temnechinus*, no proof of viviparity; AGASSIZ (3) p. 220. +*T. gajensis*, +*T. stellulatus*; MORTENSEN (195) p. 93.
- †*Temnocidaris danica*; TÖRNEBOHM (267) p. 143.
- Temnopleuridae*, classification discussed (p. 56) subfam. 1. *Temnechininae* for *Hypsiechinus*, *Prionechinus*, *Genocidaris*, *Trigonocidaris*, *Temnechinus*, *Opechinus*, *Ortholophus*, *Paradoxechinus*, *Coptophyma*, *Lepidopleurus*, 2. *Temnopleurinae* for *Temnopleurus*, *Pleurechinus*, *Salmacis*, *Salmacopsis*, *Mespilia*, *Microcyphus*, *Amblypneustes*, *Goniopneustes*, *Holopneustes* (p. 113); MORTENSEN (195).
- Temnopleurinae*, as Fam.; DELAGE (54) p. 241: as subfam. of *Temnopleuridae* (q. v.); MORTENSEN (195) p. 113.
- Temnopleurus* distinguished from *Salmacis* (p. 76), *T. cavernosus* is *Pleurechinus*, perhaps *P. bothryoides* (p. 64), *T. hardwicki* maintained, though cotypes are doubtful, incl. *T. japonicus* (p. 61), *T. reevesi*, incl. *T. reynaudi* A. Ag. et Auctt., non Ag. & Desor, pedicellariae & spicules descr. (p. 62, pls. vi, vii); MORTENSEN (195). *T. reynaudi*, pedicellariae & young; DE MEIJERE (57) p. 81, pls. xvi, xvii. *T. ioreumaticus*; HERDMAN (120) p. 140: +FOURTAU (83) p. 444: radioles, pedicellariae; DE MEIJERE (57) p. 80, 202, pl. xvi: incl. *T. reynaudi*, *T. granulatus*, but not *T. hardwicki*, also excl. many specimens placed here by authors, pedicellariae and spicules descr.; MORTENSEN (195) p. 58, pl. vi, vii.
- Temnopleurusinae* defined with list of genera; DELAGE (54) p. 239.
- Temnotrema* rejected, *T. sculpta*; MORTENSEN (195) p. 61.
- †*Tetracidaris*; DELAGE (54) p. 229: origin of interambulacra; AGASSIZ (3) p. 82.
- Tetrodiscus* diagnosis, incl. *Echinodiscus* & *Lobophora* (p. 423), *T. auritus*, variations, G. of Suez and †beaches (p. 425), *T. bisperforatus* (= *biforis*), G. of Suez and †beaches, the latter confused by Walther with *Amphiope fuchsii*, measurements, incl. *Lobophora truncata* (p. 426); FOURTAU (83).

- †*Thylechinus*; DELAGE (54) p. 238.
 †*Tiarechinus*; DELAGE (54) p. 219.
 †*Tiarechinusinae* defined, incl. *Lysechinus*; DELAGE (54) p. 219.
 †*Tiarinae*; DELAGE (54) p. 234.
 †*Tipocidaris*:—*T. clavigera* (p. 76), *T. hirudo* (pp. 70, 77); COLLET (44).
Toreumatica rejected (p. 61) but might be used for *Temnopleurus reevesi* (p. 76); MORTENSEN (195).
 †*Toxaster*:—*T. complanatus*; STRANGWAYS (266) p. 73. *T. texanus*; UDDEN (273) p. 35, 37.
Toxobrissus distinguished from *Brissopsis* (p. 193), *T. pacificus* descr. (p. 192, pls. ciii, cv); AGASSIZ (3).
Toxocidaris; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376.
Toxopneustes descr.; DELAGE (54) p. 244, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1372. †*T. delaunayi*; COUFFON (46) p. 41. *T. lividus*, vide sub *Paracentrotus*. *T. pileolus*; HERDMAN (120) p. 140: radioles, spicules, pedicellariae; DE MEIJERE (57) p. 92, pl. xvii: distinguished from *Echinus trizonalis* & *Boletia bizonata*; MORTENSEN (195) p. 120. *T. variegatus*, vide sub *Psammechinus*.
Toxopneustesinae defined with list of genera; DELAGE (54) p. 243.
 †*Trachyaster* (v. etiam sub *Hemiaster*):—*T. gourdoni*, *T. trutati*; GOURDON (102) p. 220.
 †*Trachypatagus meneghini*; DAINELLI (50), & descr. (49) p. 197, pl. xv.
Tretocidaris; DELAGE (54) p. 228.
Trigonocidarinae; DELAGE (54) p. 240.
Trigonocidaris descr.; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *T. albida*, Sulu Is., var. (p. 73, 202), *T. monolini* referred to *Genocidaris* (q. v.) (p. 74); DE MEIJERE (57).
Tripneustes descr.; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1372. *T. gratilla*; MARTENS (185) p. 131: (= *variegatus* & *angulosus* Leske), colour, spicules; DE MEIJERE (57) p. 95.
Tripylus; DELAGE (54) p. 271, fig.
Tromikosoma; DELAGE (54) p. 223, fig. *T. mordens* n. sp., S. of Timor, 2050m.; DE MEIJERE (57) p. 39, pl. xiii.
Urechinidae, n. fam. for *Urechinus*, *Cystechinus*, *Calymne*, *Phrissocystis*; MEISSNER in HAMANN (112) p. 1402: as sub-fam. [of *Spatangidae* ?], incl. *Urechinus*, *Cystechinus*, *Pilematechinus* n. g., & *Calymne* (p. 131), as fam. of "Ananchytid Spatangoids" (p. 150), as sub-fam. of *Ananchytidae* (p. 152); AGASSIZ (3).
Urechinus diagnosis; MEISSNER in HAMANN (112) p. 1402. *U. giganteus* descr.; AGASSIZ (3) p. 152, pls. lxxii–lxxiv, also p. 130. *U. naresianus*; BELL (22A): actinal area (p. 122, 130, 154 & figg.) apical system (p. 156 & fig., pl. lxxiv); AGASSIZ (3).
 †*Xenocidaris*, *X. clavigera*, *X. conifera*, *X. cylindrica*; KLEM (142) pp. 75–76.
 †*Zeuglopleurus*; MORTENSEN (195) p. 112. *Z. rowei*, in *Marsupites* zone; ROWE (235) p. 255, 256, 293.

(D).—ASTEROIDEA.

Asteridia divided into Subclass 1, *Palasteridiae*, 2, *Euasteridiae*, the latter alone into Orders 1, *Phanerozonida*, 2, *Cryptozonida*, each with its Families; DELAGE (54) p. 82 sqq.
Acantharchaster; DELAGE (54) p. 86.
Acanthaster; op. cit. p. 102. *A. solaris*; MARTENS (185).
Acanthasterinae; DELAGE (54) p. 102.

- Acodontaster*; DELAGE (54) p. 87.
Amphiaster; DELAGE (54) p. 93.
Anasterias; op. cit. p. 103. *A. belgicae*, *A. chirophora*; LUDWIG (164) p. 699. *A. perrieri*; MEISSNER (186) p. 12. *A. studeri*; loc. cit.; LUDWIG (164) p. 698.
Anthenea, descr.; DELAGE (54) p. 91. *A. sp.*; HERDMAN (120) p. 144. †*A. schlumbergeri* descr.; LORIOI (162) p. 63, pl. iv.
Antheneinae, defined, with list of genera; DELAGE (54) p. 91.
Antheniaster; DELAGE (54) p. 91.
Anthenoides; DELAGE (54) p. 91.
Archaster descr.; DELAGE (54) p. 85. *A. sp.*; KIAER (140).
Archasteridae, vide *Goniodon*.
Archasterinae defined, with list of genera; DELAGE (54) p. 85.
Asteracanthion rubens; JANSENS (136).
Asterias (vide etiam sub *Diplasterias*): descr.; DELAGE (54) p. 103, figg.: brachiolaria; WEYSSE (284) p. 91, 92, figg. *A. sp.*; LUDWIG (164) p. 697, 698. *A. antarctica*; loc. cit.: descr.; LORIOI (162) p. 36, pl. iv: incl. all S. American monacanthid spp.; MEISSNER (186) p. 10, pl. i. *A. austera*, descr., range; CLARK (38) p. 555, pls. ii, iv. *A. capitata*; LOEB (158, 159). *A. compta*, syn. of *A. tenera*; CLARK (38) p. 554. *A. (Polyasterias) fernandensis*, descr.; LORIOI (162) p. 41, pl. iii. *A. forbesi*, descr., range; CLARK (38) p. 552, pls. i, iv. *A. glacialis*; CLERC (41): DELAGE (52): GARBOWSKI (93): HERBST (117): HÉROUARD (122): MAR. BIOL. ASS. (184) p. 208: NOBRE (198) p. 52, & (199). *A. lincki*; MICHAÏLOVSKIJ (192) p. 165. †*A. cf. lumbricalis*; SCHAEFER (242) p. 31. *A. (Cosmasterias) lurida* descr.; LORIOI (162) p. 39, pl. iii. *A. muelleri*; LUDWIG (164) p. 697: northern var., probably = *A. hyperborea* Dan. & Kor.; MICHAÏLOVSKIJ (192) p. 165. *A. ochracea*; LOEB (158, 159). *A. pallida*, homonym of *A. vulgaris*; CLARK (38) p. 554. *A. panopla*; MICHAÏLOVSKIJ (192) p. 165. *A. perrieri*; LUDWIG (164) p. 698. *A. polaris*; ØSTERGREN (202). *A. rubens*; DUBOIS (72): GIARD (100): KIAER (140): MAR. BIOL. ASS. (184) p. 208: NOBRE (198) p. 53, & (199). *A. tenera*, incl. *A. compta*, descr., range; CLARK (38) p. 554, pls. ii, iv. *A. tenuispina*; NOBRE (199). *A. vulgaris*; WEYSSE (284) p. 94, fig.: descr., range; CLARK (38) p. 553, pls. i, iv.
Asteriasinae, defined with list of genera; DELAGE (54) p. 103.
Asterina, descr.; DELAGE (54) p. 94, figg. *A. cepheus*; HERDMAN (120) p. 145: MARTENS (185). *A. coronata*, *A. exigua*, op. cit. *A. fimbriata*; MEISSNER (186) p. 16. *A. gibbosa*; MAR. BIOL. ASS. (184) p. 207: NOBRE (198) p. 53 & (199). *A. perrieri* n. sp., Port San Antonio, Patagonia; LORIOI (162) p. 27, pl. ii. *A. stellifera*; MEISSNER (186) p. 16.
Asterininae, defined as Fam. with list of genera (p. 94), as sub-fam. (p. 95); DELAGE (54).
Asteroderma; DELAGE (54) p. 103.
Asterodiscus; DELAGE (54) p. 93.
Asterodon; DELAGE (54) p. 86.
Asteropsis; DELAGE (54) p. 94.
Astrella young of *Luidia*; DELAGE (54) p. 88.
Astrogoniinae; DELAGE (54) p. 91.
Astrogonium; loc. cit. *A. patagonicum*; MEISSNER (186) p. 18.
Astropecten descr.; DELAGE (54) p. 87, figg. *A. andromeda*; KIAER (140). *A. aurantiaca*; NOBRE (199). †*A. elegans*; WALTHER (281) p. 166. *A. euryacanthus*; HERDMAN (120) p. 143. †*A. helveticus*; SCHUETZE (251) p. 156. *A. hemprichi*; HERDMAN (120) p. 143: incl. *A. zebra*, & ? *A. notograptus*; BELL in op. cit. p. 149. *A. indicus*; op. cit. p. 143. *A. irregularis*; NOBRE (198) p. 53: MAR. BIOL. ASS. (184) p. 207. †*A. leckenbyi*; STRANGWAYS (266) p. 15. *A. polyacanthus*;

- HERDMAN (120) p. 143. †*A. rectus* (p. 40), †*A. scarburgensis* (p. 15); STRANGWAYS (266). *A. subinermis*; NOBRE (199). *A. velitaris*; BELL in HERDMAN (120) p. 150. *A. zebra*; op. cit. p. 143: photograph of 3 cotypes, see *A. hemprichi*; BELL in op. cit. p. 149.
- Astropecteninae* defined as Fam., with list of genera; DELAGE (54) p. 87.
- Astropecteninae* as Subfam.; DELAGE (54) p. 88.
- Bathybiaster*; loc. cit. *B. loripes*; MEISSNER (186) p. 19. *B. pallidus* syn. of *B. vexillifer*; GRIEG (106) p. 14: incl. *B. vexillifer* & *Ilyaster mirabilis*; ÖSTERGREN (202).
- Benthaster*; DELAGE (54) p. 99.
- Blakia*ster; DELAGE (54) p. 86.
- Brisinga*, descr.; DELAGE (54) p. 104.
- Brisingaster*; DELAGE (54) p. 104.
- Brisinginae*, defined, with list of genera; loc. cit.
- Bunaster*; DELAGE (54) p. 98.
- Callia*ster; DELAGE (54) p. 91.
- Calliderma*; DELAGE (54) p. 91.
- Calvasterias*; DELAGE (54) p. 103.
- Calveria*; DELAGE (54) p. 100.
- Calveria*ster **nom. nov.** pro *Calveria* Carp., Jeffr., & Thomson 1870, non Thomson 1873; DELAGE (54) p. 100.
- Calycaster*; DELAGE (54) p. 103.
- Calyptaster*; DELAGE (54) p. 99.
- Caulaster*; DELAGE (54) p. 89.
- Chaetaster*; DELAGE (54) p. 99 & fig.
- Chaetasterinae*; DELAGE (54) p. 99.
- Cheiraster*; DELAGE (54) p. 86 & fig.
- Chitonaster*; DELAGE (54) p. 91.
- Choriaster*; DELAGE (54) p. 93.
- Cnemidaster*; DELAGE (54) p. 102 & fig.
- Colpaster*; DELAGE (54) p. 105.
- Coronaster*; op. cit. p. 103. *C. octoradius*; MEISSNER (186) p. 5.
- Cosmasterias*, vide sub *Asterias* et *Diplasterias*.
- Craspidaster*; DELAGE (54) p. 88.
- Crenaster* Ferr.; DELAGE (54) p. 86.
- Cribra*ster; op. cit. p. 101. *C. sladeni*; MEISSNER (186) p. 13.
- Crib[r]ella*; DELAGE (54) p. 101. *C. oculata*; NOBRE (199). *C. pagenstecheri*, incl. all Antarctic spp.; MEISSNER (186) p. 13. *C. sanguinolenta*; LUDWIG (164) p. 697: descr., range; CLARK (38) p. 555, pls. iii, iv: formae *laevior* and *scabrior* not clearly separated; MICHAÏLOVSKIJ (192) p. 166.
- Crossaster*, descr.; DELAGE (54) p. 100. *C. australis*; MEISSNER (186) p. 17.
- C. papposus*, 2 forms distinguished; MICHAÏLOVSKIJ (192) p. 169.
- Cryptaster*; DELAGE (54) p. 99.
- Cryptozonida*, defined, with Famm. *Linck*-, *Pteraster*-, *Solaster*-, *Echinaster*-, *Zoroaster*-, *Stichaster*-, *Heliaster*-, *Pedicellaster*-, *Asterias*-, *Brisinginae*; DELAGE (54) p. 96-105.
- Ctenaster*; DELAGE (54) p. 100.
- Ctenodiscus*; op. cit. p. 89. *C. australis*; MEISSNER (186) p. 18. *C. corniculatus*; MICHAÏLOVSKIJ (192) p. 171. *C. procurator*; MEISSNER (186) p. 18.
- Culcita*, descr.; DELAGE (54) p. 93, figg. *C. schmideliana*, living appearance; HERDMAN (120) p. 144.
- Cycethra*; DELAGE (54) p. 95. *C. electilis*, descr. (p. 23, pl. ii), *C. lahillei* n. sp., San Mathias Gulf, Patagonia (p. 25, pl. ii), *C. simplex*, descr., distinguished from *Goniodiscus verrucosus* Phil. (p. 21, pl. ii); LORIOLE (162). *C. verrucosa*, incl. *C. simplex*; MEISSNER (186) p. 14.
- Dermasterias*; DELAGE (54) p. 94.

- Dictyaster* ; DELAGE (54) p. 101.
- Diplasterias* (vide etiam sub *Asterias*) *alba* (p. 9), *D. brandti*, incl. *Asterias neglecta*, *belli*, and *glomerata*, and all probably synn. of *D. meridionalis* (p. 7), *D. georgiana* (p. 9), *D. germaini* (p. 7), *D. loveni* (p. 9); MEISSNER (186). *D. luetkeni*; loc. cit.: LUDWIG (164) p. 698. *D. lurida*, incl. *Asterias obtusispinosa* (p. 8), *D. meridionalis* (p. 8), *D. philippii* (p. 9), *D. spinosa* (p. 9); MEISSNER (186). *D. steineni*; loc. cit.: LUDWIG (164) p. 698.
- Diplopteraster* ; DELAGE (54) p. 99.
- Dipsacaster* ; DELAGE (54) p. 88.
- Disasterina* ; DELAGE (54) p. 95.
- Dorigona* ; DELAGE (54) p. 91.
- Dytaster* ; DELAGE (54) p. 86.
- Echinaster* descr. ; op. cit. p. 101, figg. *E. antonioensis* (p. 29, pl. ii), *E. lepidus* (p. 30, pl. ii), **n. spp.**, Port San Antonio, Patagonia; LORIOLO (162). *E. oculatus*; NOBRE (199). *E. purpureus*; HERDMAN (120) p. 145. *E. sepositus*; NOBRE (199).
- Echinasterinae*, defined as Fam. with list of genera, also as Subfam. ; DELAGE (54) p. 101. Vide etiam *Lahillea*.
- † *Echinodiscaster* **nom. mut.** pro *Echinodiscus* Stürtz non Ag. ; DELAGE (54) p. 84.
- Eugoniaster* ; DELAGE (54) p. 90.
- Ferdina* ; DELAGE (54) p. 98.
- Freyella* ; DELAGE (54) p. 105.
- Fromia* ; DELAGE (54) p. 98.
- Ganeria* ; op. cit. p. 95, *G. falklandica* ; MEISSNER (186) p. 14.
- Ganeriinae* ; DELAGE (54) p. 95.
- Gastraster* ; op. cit. p. 103; discussed (p. 35), *G. studeri* **n. sp.**, Port San Antonio, Patagonia (p. 34, pl. iv); LORIOLO (162).
- Gnathasterinae* ; DELAGE (54) p. 86.
- † *Goniaster arduennensis* ; COLLET (44) p. 77.
- Goniiodiscinae* ; DELAGE (54) p. 91.
- Goniiodiscus* ; loc. cit.: *G.?* sp. juv. ; HERDMAN (120) p. 144. *G. verrucosus*; LORIOLO (162) p. 22.
- Goniodon* **n. g.** of *Gnathasterinae*, Subfam. of *Archasteridae*; PERRIER (92) Zool. Rec. 1894, Stellérides du Travailleur, p. 244, non HERRICK, Bull. Denison Univ. 1888, a Mollusc: DELAGE (54) p. 87.
- Goniopecten* ; DELAGE (54) p. 86.
- Gymnasterias*, descr. ; DELAGE (54) p. 93, fig.
- Gymnasteriasinae*, defined with list of genera ; loc. cit.
- Gymnobrissinga* ; DELAGE (54) p. 104.
- Hacelia* ; DELAGE (54) p. 98, fig.
- Heliaster*, descr. ; DELAGE (54) p. 103.
- Heliasterinae*, defined with list of genera ; loc. cit.
- Henricia sanguinolenta* ; COLE (43) : MAR. BIOL. ASS. (184) p. 208: NOBRE (199).
- Hexaster* ; DELAGE (54) p. 99. *H. obscurus*; LUDWIG (164) p. 696.
- Hippasteria* ; DELAGE (54) p. 92. *H. hyadesi*; MEISSNER (186) p. 18.
- Hoplaster* ; DELAGE (54) p. 87.
- Hymenaster* ; DELAGE (54) p. 99, fig. *H. nobilis*; LUDWIG (164) p. 697. *H. pellucidus*; MICHAÏLOVSKIJ (192) p. 167. *H. praecoquis*; LUDWIG (164) p. 697.
- Hyphalaster* ; DELAGE (54) p. 89 & fig.
- Iconaster* ; DELAGE (54) p. 91.
- Ilyaster* ; DELAGE (54) p. 88.
- Korethraster* ; DELAGE (54) p. 100. *K. hispidus*; MICHAÏLOVSKIJ (192) p. 185.
- Korethrasterinae* ; DELAGE (54) p. 100.

- Labidiaster*; op. cit. p. 104, figg. *L. radiosus*; MEISSNER (186) p. 4.
Lahillea n. g. of *Echinasteridae* (p. 32) with genotype *L. mira* n. sp., San
 Mathias Gulf, Patagonia (p. 33, pl. iii); LORIOI (162).
Lasiaster; DELAGE (54) p. 94. *L. hispidus* is *Poraniomorpha* (q. v.);
 ÖSTERGREN (202).
Lebrunaster; DELAGE (54) p. 95. *L. paxillosus*; MEISSNER (186) p. 16.
Leiaster; DELAGE (54) p. 98.
Leptasterias, rejected; CLARK (38) p. 555.
Leptogonaster; DELAGE (54) p. 87.
Leptogonasterinae; DELAGE (54) p. 87.
Leptoptychaster; op. cit. p. 88. *L. arcticus*; MICHAILOVSKIJ (192) p. 170.
L. kerguelenensis; LUDWIG (164) p. 695.
Linckia, descr.; DELAGE (54) p. 97, fig. *L. diplax*; KELLOGG (139). *L.*
laevigata; MARTENS (185): HERDMAN (120) p. 145: *L. multiforis*;
 loc. cit. *L. pacifica*; KELLOGG (139): var *diplex*; HERDMAN (120)
 p. 145.
Linckiinae subfam.; DELAGE (54) p. 98.
Linckinae, defined as Fam., with list of genera; op. cit. p. 97.
Litonotaster; DELAGE (54) p. 90.
Lonchotaster; DELAGE (54) p. 86.
Lophaster; op. cit. p. 100. *L. furcifer*; MICHAILOVSKIJ (192) p. 168. *L.*
pentactis, *L. stellans*; MEISSNER (186) p. 16.
Lophopteraster; DELAGE (54) p. 99.
Luidia, descr.; op. cit. p. 88, fig. *L. bellonae*; MEISSNER (186) p. 19.
L. hardwickii, and young?, *L. maculata*; HERDMAN (120) p. 143. *L.*
sarsi; MAR. BIOL. ASS. (184) p. 207.
Luidiaster; DELAGE (54) p. 86.
Luidiinae; DELAGE (54) p. 88.
Lytaster; DELAGE (54) p. 103.
Marginaster; DELAGE (54) p. 94.
Marsipaster; DELAGE (54) p. 99.
Mediaster; DELAGE (54) p. 91.
Metopaster; DELAGE (54) p. 91.
Metodira; op. cit. p. 99. *M. subulata*; HERDMAN (120) p. 145.
Metrodირinae; DELAGE (54) p. 99.
Mittelpaster; DELAGE (54) p. 91.
Mimaster; DELAGE (54) p. 87.
Mimasterinae; DELAGE (54) p. 87.
Mithrodia; DELAGE (54) p. 102.
Mithrodiinae; DELAGE (54) p. 102.
Moiraster; DELAGE (54) p. 88.
Myxaster; DELAGE (54) p. 100.
Narcissia; DELAGE (54) p. 99.
Nardoa; op. cit. p. 98. †*Nardoa? fourtaui* n. sp., Santonian, Abou
 Roach, Egypt; LORIOI (162) p. 65, pl. iv. *N. tuberculata*; HERDMAN
 (120) p. 145.
Nectria; DELAGE (54) p. 91.
Neomorphaster; DELAGE (54) p. 102.
Nepanthia; DELAGE (54) p. 95.
Nidorellia; DELAGE (54) p. 92.
Nymphaster; DELAGE (54) p. 91.
Odinia; DELAGE (54) p. 104.
Odontaster; op. cit. p. 86. *O. belli*, *O. granulosus* (p. 20), *O. penicillatus*,
O. singularis (p. 19); MEISSNER (186).
Ogmaster; DELAGE (54) p. 91.
Ophidiaster; op. cit. p. 98, fig. *O. cylindricus*, *O. helicostichus*, juv.;
 HERDMAN (120) p. 145.
 †*Palaeaster*; DELAGE (54) p. 83, figg.

- Palmipedinae*; DELAGE (54) p. 95.
Palmipes, descr.; loc. cit., figg. *P. placenta*; MAR. BIOL. ASS. (184) p. 207.
Paragonaster; DELAGE (54) p. 91.
Pararchaster; DELAGE (54) p. 86.
Pararchasterinae; DELAGE (54) p. 86.
Patiria; DELAGE (54) p. 95.
Paulia; DELAGE (54) p. 93.
Pectinaster; DELAGE (54) p. 86.
Pedicellaster, descr.; op. cit. p. 103. *P. sarsi*, *P. scaber*; MEISSNER (186) p. 5. *P. sexradiatus*; BERTRAND (27).
Pedicellasterinae, defined with list of genera; DELAGE (54) p. 103.
Peltaster; DELAGE (54) p. 90.
Pentaceropsis; DELAGE (54) p. 93. *P. obustatus*; MARTENS (185).
Pentaceros, descr.; DELAGE (54) p. 92, figg. *P. sp. juv.*; HERDMAN (120) p. 144. †*P. jurassicus*; WALTHER (281) p. 166. *P. lincki* (p. 144, 147, fig.), *P. mammillatus* (p. 144); HERDMAN (120). *P. nodosus*; loc. cit.: MARTENS (185). †*P. pustuliformis*; WALTHER (281) p. 167. *P. reticularis*; WEYSSE (284) p. 93, fig. *P. turritus*; MARTENS (185) p. 133.
Pentacerosinae, defined, with list of genera; DELAGE (54) p. 92.
Pentagonaster, descr.; op. cit. p. 89, figg. *P. austro-granularis* (p. 17), *P. patagonicus* (p. 18); MEISSNER (186).
Pentagonasterinae, defined, as Fam. with list of genera (p. 89), as subfam. (p. 90); DELAGE (54).
Peribolaster; op. cit. p. 100. *P. folliculatus*; MEISSNER (186) p. 17.
Perknaster; DELAGE (54) p. 101.
Persephonaster; DELAGE (54) p. 86.
Phaneraster; DELAGE (54) p. 91.
Phanerozonida, **nom. mut.** pro *Phanerozonia*, defined with Famm.
Archaster-, *Astropecten*-, *Porcellanaster*-, *Pentagonaster*-, *Anthene*-, *Pentaceros*-, *Gymnasterias*-, *Asterinae*-, DELAGE (54) p. 84-96.
Pharia; DELAGE (54) p. 98.
Phataria; loc. cit. *P. unifascialis* var. *bifascialis*; MONKS (193).
Pholidaster; DELAGE (54) p. 102.
Phoxaster; DELAGE (54) p. 88.
Platasterias; DELAGE (54) p. 88.
Plectaster; DELAGE (54) p. 101.
Plutonaster; op. cit. p. 86, fig. *P. parelii*; MICHAILOVSKIJ (192) p. 171.
Plutonasterinae; DELAGE (54) p. 86.
Polyasterias, vide sub *Asterias*.
Pontaster; DELAGE (54) p. 86. *P. tenuispinus*; MICHAILOVSKIJ (192) p. 171.
Porania; DELAGE (54) p. 94. *P. antarctica*; MEISSNER (186) p. 17. *P. pulvillus*; MAR. BIOL. ASS. (184) p. 207.
Poraniomorpha; DELAGE (54) p. 94. *P. hispida* incl. *P. rosea* as var., & *L. villosus* as young of var., also ? *P. borealis*; ÖSTERGREN (202).
Poraniopsis; DELAGE (54) p. 94. *P. echinasteroides*; MEISSNER (186) p. 17.
Porcellanaster, descr.; DELAGE (54) p. 89 & figg.
Porcellanasterinae, defined, with list of genera; loc. cit.
Prionaster; DELAGE (54) p. 86.
Prognaster; DELAGE (54) p. 102.
Pseudarchaster discus; MEISSNER (186) p. 20.
Pseudaster; DELAGE (54) p. 89.
Pseudoreaster; DELAGE (54) p. 92.
Psilaster; op. cit. p. 88. *P. fleurbaei*; MEISSNER (186) p. 19.
Pteraster, descr.; DELAGE (54) p. 99. *P. ingouffi* (p. 13), *P. lebrunii*

- (p. 14); MEISSNER (186). *P. militaris*; LUDWIG (164) p. 696 :
 MICHAILOVSKIJ (192) p. 168. *P. pulvillus*; loc. cit.
Pterasterinae, defined, with list of genera; DELAGE (54) p. 99.
Pycnopodia; op. cit. p. 104. *P. spuria*; LOEB (155, 158, 159).
Pyrenaster; DELAGE (54) p. 90.
Pythonaster; DELAGE (54) p. 99.
Radiaster; DELAGE (54) p. 100.
Randasia; DELAGE (54) p. 93.
Retaster; op. cit. p. 99. *R. cribrosus*; HERDMAN (120) p. 145: ? juv.;
 BELL in op. cit. p. 150. *R. gibber*; MEISSNER (186) p. 14. *R. insignis*;
 BELL in HERDMAN (120) p. 150. *R. verrucosus*; MEISSNER (186)
 p. 14.
Rhegaster; DELAGE (54) p. 94, fig. *R. tumidus* incl. *R. murrayi*;
 ÖSTERGREN (202): var. *tuberculata*; MICHAILOVSKIJ (192) p. 170.
Rhipidaster; DELAGE (54) p. 100.
Rosaster; DELAGE (54) p. 91.
Scaphaster; DELAGE (54) p. 94.
Sideriaster; DELAGE (54) p. 88.
Solaster; op. cit. p. 100. *S. affinis* syn. of *S. papposus*; ÖSTERGREN
 (202). *S. endeca*; MICHAILOVSKIJ (192) p. 168: descr., range; CLARK
 (38) p. 556, pls. iii, iv. *S. glacialis* is 7-rayed *S. endeca*; ÖSTERGREN
 (202). *S. papposus*; MAR. BIOL. ASS. (184) p. 208: var. *squamata*
 is distinct sp.; ÖSTERGREN (202). *S. regularis*; MEISSNER (186)
 p. 17. *S. syrtensis* is valid sp.; ÖSTERGREN (202).
Solasterinae, defined, as Fam. with list of genera, also as Subfam.;
 DELAGE (54) p. 100.
 †*Sphaeraster*, history, *S. molassicus* n. sp., Helvetian, Suabia; SCHUETZE
 (251) p. 155, pl. ii. *S. punctatus*; SIEMIRADZKI (255) p. 139.
 †*Sphaerites* vide *Sphaeraster*.
Stegnaster; DELAGE (54) p. 96.
Stellaster; op. cit. p. 91. *S. incei*; HERDMAN (120) p. 143.
 †*Stenaster salteri*; AMI (7) p. 61.
Stephanaster; DELAGE (54) p. 90.
Stichaster, descr.; op. cit. p. 102. *S. albulus*; MICHAILOVSKIJ (192)
 p. 166. *S. arcticus*, syn. of *S. roseus*; ÖSTERGREN (202). *S. aurantiacus*;
 MEISSNER (186) p. 12. *S. nutrix*; loc. cit.; LUDWIG (164) p. 696. *S.*
roseus; KIAER (140).
Stichasterinae, defined, with list of genera; DELAGE (54) p. 102.
Styracaster; DELAGE (54) p. 89.
 †*Taeniaster* (?) *fournieri* n. sp., Visean, Belgium, placed in *Oph.*, but is
 perhaps *Ast.* [*Taeniaster* is an Ordovician Asteroid]; FRAIPONT (85)
 p. 7, pl. i.
Tarsaster; DELAGE (54) p. 103.
Thoracaster; DELAGE (54) p. 89.
Tremaster; DELAGE (54) p. 96.
Tylaster; DELAGE (54) p. 94.
Uniophora; DELAGE (54) p. 103.
Valvaster; DELAGE (54) p. 102.
Valvasterinae; DELAGE (54) p. 102.
Zoroaster, descr.; DELAGE (54) p. 102, fig.
Zoroasterinae, defined, with list of genera; loc. cit.

(E.)—OPHIUROIDEA.

- Ophiuridia* divided into Subclass 1. *Palophiuridia* with Orders *Lys-*
ophiurida & *Streptophiurida*, 2. *Colophiuridia* with Orders *Zyg-*
ophiurida & *Cladophiurida*; DELAGE (54).
Amphilepis; op. cit. p. 153. *A. mobilis* n. sp., Timor & Java sea, 216—

330 m.; KOEHLER (143) p. 94, pl. xx. *A. norvegica*; GRIEG (106) p. 28. *A. protecta* n. sp., G. of Boni, Celebes, 1158 m.; KOEHLER (143) p. 94, pl. xxiii.

Amphiodia, vide sub *Amphiura*.

Amphioplus, vide sub *Amphiura*.

Amphipholis, vide etiam sub *Amphiura*. *A. squamata*, descr., range; CLARK (38) p. 560, pls. vi, vii.

Amphiura descr.; DELAGE (54) p. 152, figg. *A. sp.*; HERDMAN (120) p. 146. *A. agitata* n. sp., Sulu Archipel, 275 m.; KOEHLER (143) p. 79, pl. xiii. *A. candida*, holotype & Marktanner's neotype redescri.; KOEHLER (144) p. 66 & figg. *A. canescens* referred to *Ophiactis* (p. 96), *A. (Amphioplus) caulleryi* (p. 91); KOEHLER (143). *A. chiazji*; GRIEG (106) p. 27: MAR. BIOL. ASS. (184) p. 209: ÖSTERGREN (204). *A. concinna*, Molucca sea, 2081 m. (p. 77, pl. xiii), *A. (Amphioplus) confinis*, G. of Boni, Celebes, 1158 m. (p. 89, pl. xiv), *A. (Amphiodia) crassa*, Macassar & Molucca sea, 450-2291 m. (p. 83, pl. xv), *A. (Amphioplus) debilis*, G. of Boni, Celebes, 1158 m. (p. 88, pl. xiv): all n. spp.; KOEHLER (143). *A. denticulata*, new to European waters, descr.; GRIEG (106) p. 27. *A. (Amphiodia) diomedeeae* (p. 86), *A. duplicata* referred to *Ophiactis* (p. 96); KOEHLER (143). *A. elegans*; NOBRE (198) p. 54, & (199): MAR. BIOL. ASS. (184) p. 209. *A. filiformis*; loc. cit. *A. (Amphioplus) firma* n. sp., Gilolo passage, 411 m. (p. 87, pl. xii), *A. (Amphioplus) gentilis* n. sp., Gilolo passage, 835 m. (p. 86, pl. xvi), *A. grandis* (p. 81), *A. (Amphiodia) grata* n. sp., G. of Boni, Celebes, 1158 m. (p. 85, pls. xviii, xix), *A. hilaris* n. sp., Macassar Str., 1301 m. (p. 80, pl. xv); KOEHLER (143). *A. integra*, a cotype redescri.; KOEHLER (144) p. 65 & figg. *A. iris* (p. 81), *A. (Amphioplus) lorioli* (Koehl. sub *Ophiactis*) (p. 91, pl. xv); KOEHLER (143). *A. magellanica*; LUDWIG (164) p. 694. *A. (Amphipholis) misera* (p. 83), *A. nociva* n. sp., Banda sea, 204 m. (p. 78, pl. xv); KOEHLER (143). *A. ochroleuca*, holotype, is an *Amphiodia* not an *Amphipholis* (p. 63, figg.), *A. oerstedti*, holotype redescri. (p. 68, figg.), *A. olivacea*, a cotype descr. (p. 64, figg.); KOEHLER (144). *A. papillata*, vide sub *Ophiodoris*. *A. partita*, vide sub *Ophiactis*. *A. patagonica*; LUDWIG (164) p. 694. *A. scripta* n. sp., coast of Oman, Persian gulf, 4-6 fm.; KOEHLER (144) p. 70 & figg. *A. securigera*; GRIEG (106) p. 28. *A. (Amphiodia) servata*, Banda sea, 560 m. (p. 84, pl. xv), *A. (Amphioplus) spinulosa*, Flores Id., 247 m. (p. 92, pl. xvii): n. spp.; KOEHLER (143). *A. squamata*; LUDWIG (164) p. 693. *A. sundevalli*; GRIEG (106) p. 27: individual without tentacle-scales; MICHAÏLOVSKIÏ (192) p. 173. *A. (Amphioplus) tessellata*, Timor, 918 m. (p. 89, pl. xiii), *A. (Amphioplus) trepida*, Java sea, 289 m. (p. 93, pl. xiv), *A. uncinata*, Bima B. & Java sea, 250-330 m. (p. 76), *A. (Amphipholis) vitax*, Flores Id., 247 m. (p. 82, pl. xiii): all n. spp.; KOEHLER (143).

Amphiuridae, vide *Ophiodoris*.

Amphiurinae defined with list of genera; DELAGE (54) p. 152.

Astroceras; op. cit. p. 158. *A. compar* n. sp., Banda sea, 204-304 m. (p. 153, pls. xxii, xxx, xxxii), *A. pergamena* (p. 159); KOEHLER (143).

Astrocharis n. g. of *Astro[s]chemidae*, with genotype *A. virgo* n. sp., Sulu Archipel & Gilolo passage, 522-1089 m.; KOEHLER (143) p. 160, pls. xx, xxx.

Astrochele; DELAGE (54) p. 158.

Astrochema [sic passim! pro *Astroschema*]; KOEHLER (143).

Astrocladus; DELAGE (54) p. 159.

Astroclon; DELAGE (54) p. 158.

Astrocnida; DELAGE (54) p. 158.

Astrocreas Verrill probably err. typ. pro *Astroceras* Lym. [this is so]; DELAGE (54) p. 159.

- Astrodia* Verrill, 1899, probably err. typ. pro *Astrocnida*; loc. cit.
 [This is wrong: although not so stated by Verrill and therefore not so entered in Zool. Rec., *Astrodia* was n. g. of *Astronycidae* first mentioned VERRILL (244) Zool. Rec. 1899, p. 74, first diagnosed VERRILL (341) Zool. Rec. 1900, p. 371.]
- Astrogeron*; DELAGE (54) p. 155.
- Astrogomphus*; op. cit. p. 158. *A. munitus* n. sp., Gilolo passage, 1089 m.; KOEHLER (143) p. 157, pls. xxii, xxxii.
- Astronycidae*, vide *Astrodia*.
- Astronyx* (seu *Asteronyx*); DELAGE (54) p. 158. *A. loveni*; GRIEG (106) p. 33: KOEHLER (143) p. 167.
- Astrophiiura* descr.; DELAGE (54) p. 159.
- Astrophyton*; loc. cit. *A. sculptum*, *A. verrucosum*; MARTENS (185).
- Astroporpa*; DELAGE (54) p. 157.
- Astroschema* descr.; loc. cit. *A. fastosum*, Minahassa, 1200 m. (p. 161, pls. xxviii, xxxii, xxxiii, xxxiv), *A. ferox*, Banda sea, 204 m. (p. 162, pls. xxxii, xxxiii), *A. migrator*, Macassar Str., 1301 m. (p. 164, pls. xxiv, xxx, xxxv): all n. spp.; KOEHLER (143).
- Astroschematidae*, vide *Astrocharis*.
- Astroscheminae*, defined with list of genera; DELAGE (54) p. 157.
- Astrotoma*; op. cit. p. 158. *A. bellator*, Sulu Archipel., 275 m. (p. 154, pls. xix, xxiii, xxviii), *A. vecors*, Banda sea & Timor, 204-520 m. (p. 155, pls. xxi, xxvii, xxxii): n. spp.; KOEHLER (143).
- Brachyophiuridae*, defined, with Famm. *Ophiiderm*-, *Ophiolepis*-inae; DELAGE (54) p. 148.
- Cladophiuridae*, defined with Famm. *Astroschem*-, *Trichaster*-, *Euryale*-inae; DELAGE (54) p. 157.
- Colophiuridae* defined; DELAGE (54) p. 144 & 147.
- Euryale*; op. cit. p. 159. *E. ludwigi*; MARTENS (185).
- Euryaleinae*, defined, with list of genera; DELAGE (54) p. 158.
- + *Geocoma*:—*G. carinata*, *G. planata*; WALTHER (281) p. 166.
- Gorgonocephalus* descr.; DELAGE (54) p. 158, fig. *G. agassizi*; GRIEG (106) p. 35: MICHAÏLOVSKIJ (192) p. 175: descr., range; CLARK (38) p. 561, pls. vi, vii. *G. arborescens*; NOBRE (199). *G. eucnemis*; GRIEG (106) p. 35 & (107) p. 4: MICHAÏLOVSKIJ (192) p. 174. *G. lamarcki* (p. 33), *G. lincki*, variations descr. (p. 35, fig.); GRIEG (106).
- Gymnolophus*; DELAGE (54) p. 157.
- Gymnophiura*; DELAGE (54) p. 149.
- Hemiphotis*; op. cit. p. 153. *H. cordifera*; LUDWIG (164) p. 693.
- Luetkenia* Brock; DELAGE (54) p. 156: validity questioned, *L. cataphructa*, holotype; KOEHLER (144) p. 114, figg.
- + *Lysophiurida* defined; DELAGE (54) p. 145.
- Nectophiuridae*, defined, with Famm. *Amphiur*-, *Ophiohelus*-, *Ophiacant*-, *Ophiocom*-, *Ophiotrix*-inae; DELAGE (54) p. 152.
- Ophiacantha* descr.; op. cit. p. 154, figg.: Verrill's divisions reduced to subgenera; KOEHLER (143) p. 101. *O. abyssicola*; GRIEG (106) p. 31. *O. anomala*; LUDWIG (164) p. 694. *O. augusta* n. sp. Minahassa & Timor, circa 1200 m.; KOEHLER (143) p. 105, pl. xix. *O. bidentata*; GRIEG (106) p. 31: MICHAÏLOVSKIJ (192) p. 174. *O. clandestina* n. sp. Macassar Str., 655-724 m. (p. 108, pl. xix), *O. composita*, norm differs from holotype (p. 120, pl. xxiii), *O. congesta* n. sp., Macassar & Gilolo passage, 450-798 m. (p. 103, pl. xxiv), *O. cosmica* (p. 108), *O. (Ophientodia) dilecta* n. sp., Macassar Str. & Java sea, 724-794 m. (p. 117, pl. xxii), *O. duplex* (p. 109), *O. (Ophientodia) eximia* n. sp., Malay Archipel., 724-1788 m. (p. 116, pl. xxi), *O. fausta* n. sp., Banda sea, 304 m. (p. 104, pl. xx), *O. ficta* n. sp. ibid. 204 m., link w. *Ophiomitrella* (p. 121, pl. xvi); KOEHLER (143). *O. imago*; LUDWIG (164) p. 695. *O. (Ophiopristis) imperita* n. sp. Arru Id., 1788 m. (p. 114,

- pl. xvii), *O. (Ophiotreta) inutilis* n. sp. Java & Banda sea, 238-397 m. (p. 111, pl. xxi), *O. (Ophiopristsis) luctuosa* n. sp. Timor, 216 m. (p. 115, pl. xx); KOEHLER (143). *O. marsupialis*; LUDWIG (164) p. 695. *O. (Ophiectodia) matura* n. sp., Banda sea, 797 m. (p. 112, pl. xxiii), *O. normanni* (p. 107), *O. pentagona* (p. 110), *O. (Ophiolimna) perfida* n. sp., Malay Archipel., 411-959 m. (p. 118, pl. xxiii), *O. (Ophiopristsis) procera* n. sp., Banda sea, 595 m. (p. 113, pl. xxii), *O. relictæ* n. sp., Malay Archipel., 538-1624 m. (p. 106, pl. xvii), *O. tenuis* n. sp., Banda sea, 304 m. (p. 102, pl. xvi), *O. valenciennesi* (p. 110); KOEHLER (143). *O. vivipara*; LUDWIG (164) p. 694. *O. vorax*; KOEHLER (143) p. 109.
- Ophiacanthidae*, vide *Ophiomytis*.
- Ophiacantinae* defined with list of genera; DELAGE (54) p. 154.
- Ophiactis*; op. cit. p. 153. *O. abyssicola*; GRIEG (106) p. 29. *O. asperula*; LORIOLO (162) p. 43; LUDWIG (164) p. 693. *O. balli*; MAR. BIOL. ASS. (184) p. 209: descr.; GRIEG (106) p. 29. *O. dissidens* n. sp. Macassar Str. 1301 m. (p. 98, pls. xvii, xviii), *O. flexuosa* var. *perplexa* Koehl. (olim sp.) (p. 95); KOEHLER (143). *O. kröyeri*; LUDWIG (164) p. 693. *O. loroli* vide sub *Amphiura*. *O. modesta* (p. 63, figg.), *O. parata* n. sp., Gilolo passage, 469 m. (p. 97, pl. xxiv), *O. partita* (Koehl. sub *Amphiura*), & young (p. 96); KOEHLER (143).
- Ophiambyx*; DELAGE (54) p. 153.
- Ophiarachna*; op. cit. p. 155. *O. affinis* cotypes, & a cotype of the syn. *O. clavigera* Brock, redescr.; KOEHLER (144) p. 76. *O. incrassata*; HERDMAN (120) p. 146.
- Ophiarthrum*; DELAGE (54) p. 155.
- Ophiernus*; op. cit. p. 150. *O. adspersus*; KOEHLER (143) p. 20.
- Ophiocactiops*; DELAGE (54) p. 156. *O. unicolor*; KOEHLER (144) p. 115 & figg.
- Ophioblenna*; DELAGE (54) p. 155.
- Ophiobyrsella erinaceus* n. sp., Sulu Archipel., 275 m.; KOEHLER (143) p. 152, pl. xxvi.
- Ophiocamax*; DELAGE (54) p. 153 & figg. *O. rugosa* n. sp., Malay Archipel., 204-520 m.; KOEHLER (143) p. 139, pl. xxvi.
- Ophiocampsis*; DELAGE (54) p. 156.
- Ophiocentrus*; DELAGE (54) p. 155.
- Ophioceramius*; op. cit. p. 150. *O. clausa*, vide *Ophiomoeris*. *O. declinans* n. sp., Banda Sea, 204 m.; KOEHLER (143) p. 15, pl. iii. *O. januarii*; LORIOLO (162) p. 44. *O. obstricta* & *O. tenera*, vide *Ophiomoeris*.
- Ophiochaeta*; DELAGE (54) p. 150.
- Ophiochiton*; op. cit. p. 153: spp. in two sections; KOEHLER (143) p. 68. *O. ambulator*, ? incl. *O. carinatus* Lüttk. & Mort. (p. 70), *O. bispinosus* n. sp., Java Sea & Macassar Str., 538-655 m. (p. 71, pl. xi), *O. commixtus* n. sp., Macassar Str., 1301 m. (p. 69, pl. xi), *O. inaequalis* n. sp., Gilolo passage, 835 m. (p. 70, pl. xi); KOEHLER (143).
- Ophiochrysis* n. g. of *Ophiolcpididae*, with genotype *O. ornata* n. sp., Timor, 1224 m.; KOEHLER (143) p. 35, pl. vi.
- Ophiocytra*; DELAGE (54) p. 153.
- Ophiocirce* n. g. of *Ophiodermatidae*, with genotype *O. inutilis* n. sp., Timor, 112 m.; KOEHLER (143) p. 13, pl. iii.
- Ophiocnemis*; DELAGE (54) p. 156. *O. marmorata*; HERDMAN (120) p. 146.
- Ophiocnida*; DELAGE (54) p. 153. *O. albo-viridis*, holotype descr.; KOEHLER (144) p. 71, figg. *O. brachiata*; MAR. BIOL. ASS. (184) p. 209.
- Ophiocoma* descr.; DELAGE (54) p. 155. *O. canaliculata*, holotype redescr.; KOEHLER (144) p. 75 & figg. *O. echinata*, section of ray figd.; ROY. COLL. SURGEONS (237) p. 2. *O. nigra*; MAR. BIOL. ASS. (184) p. 209: ÖSTERGREN (204) fig. *O. scolopendrina*; HERDMAN (120) p. 146.

- Ophiocominae* defined with list of genera; DELAGE (54) p. 155.
Ophiocoris; op. cit. p. 149. *O. grandisquama* n. sp., Gilolo passage, 469 m.; KOEHLER (143) p. 11, pl. ii.
Ophiocopa; DELAGE (54) p. 155.
Ophiocrates n. g. of *Ophiolepididae* with genotype *O. lenta* n. sp., Macassar Str.; KOEHLER (143) p. 19, pl. iv.
Ophiocreas; DELAGE (54) p. 158. *O. oedipus* (p. 166), *O. sibogae* n. sp., Malay Archipel., 204–1089 m. (p. 165, pls. xxxii, xxxvi); KOEHLER (143).
Ophiocrene, ? young *Astrophyton*; DELAGE (54) p. 159.
Ophiocten; op. cit. p. 152, figg. *O. depressum*, vide *Ophioleuce*. *O. sericeum*; MICHAÏLOVSKIÏ (192) p. 173: cold water & warm water varr., latter = *Ophioglypha gracilis* Sars; GRIEG (106) p. 26.
Ophiocymbium; DELAGE (54) p. 155.
Ophioderma neglecta n. sp., Malay Archipel., 469–595 m.; KOEHLER (143) p. 153, pl. xxviii.
Ophioderma, descr.; DELAGE (54) p. 148 & fig. †*O. sp.*; BOEHM (28) p. 8, pl. i. *O. longicauda*; NOBRE (199).
Ophiodermatidae, vide *Ophiocirce*, *Ophiopallas*.
Ophiodermineae, defined with list of genera; DELAGE (54) p. 148.
Ophiodoris n. g. of *Amphiuridae* (p. 72), including *O. contrarius*, 1158–1301 m. (p. 75), *O. errans*, 595 m. (p. 74), *O. malignus*, 450 m. (p. 73), all n. spp., Malay Archipelago (pl. xii), & ? *Amphiura papillata* Lütck. & Mort.; KOEHLER (143).
Ophiogeron; DELAGE (54) p. 155.
Ophiogona; DELAGE (54) p. 149.
Ophioglypha, classification of spp. discussed, two divisions suggested according as second buccal pores open into mouth or not (p. 36), *O. aequalis* (p. 55); KOEHLER (143). *O. albida*; KIAER (140). *O. clemens* n. sp., Malay Archipel., 694–1633 m. (p. 51, pl. viii), *O. distincta* n. sp., Timor & Java sea, 216–794 m. (p. 44, pl. ix), *O. flagellata* (p. 56); KOEHLER (143). *O. hexactis*; LUDWIG (164) p. 692. *O. humilis* n. sp., Sulu Archipel., 120–400 m. (p. 39, pl. vii), *O. imbecillis* (p. 40), *O. improba* n. sp., Banda sea, 1595 m. (p. 48, pl. viii); KOEHLER (143). *O. indica*, a cotype redescr.; KOEHLER (144) p. 61, figg. *O. inornata*, incl. *O. divisa*, variations (p. 40), *O. insolita* n. sp., Banda sea & Gilolo, 204–397 m. (p. 47, pl. vii); KOEHLER (143). *O. lacertosa*; KIAER (140); NOBRE (199); UEXKUELL (274). *O. latro* n. sp., Banda sea, 204 m. (p. 41, pl. ix), *O. laudata* n. sp., Sulu Archipel., 450 m. (p. 43, pl. viii), *O. lenta* n. sp., Malay Archipelago (p. 53, pl. viii), *O. liberata* n. sp., Gilolo passage, 835 m. (p. 46, pl. vii), *O. prisca* n. sp., Banda sea, 1595 m. (p. 38, pl. vi), *O. radiata* (p. 55), *O. remota* n. sp., Flores sea, 2798 m. (p. 54, pl. ix); KOEHLER (143). *O. robusta*, descr., range; CLARK (38) p. 558, pls. vi, vii. †*O. sarsi*?; MADSEN (177) p. 530. *O. solida* (p. 43, pl. viii), *O. sordida* (p. 47), *O. urbana* n. sp., Gilolo passage, 469 m. (p. 50, pl. vii); KOEHLER (143).
Ophiogymna; DELAGE (54) p. 156.
Ophiohelix; op. cit. p. 157: syn. of *Ophiocethiops*; KOEHLER (144) p. 115.
Ophiohelus descr.; DELAGE (54) p. 153, figg.
Ophioklusinae defined with list of genera; loc. cit.
Ophiolebes; DELAGE (54) p. 155.
Ophiolepididae, vide *Ophiokrysis*, *Ophiocrates*, *Ophioleuce*, *Ophiomidas*, *Ophiomoeris*.
Ophiolepis; op. cit. p. 149. †*O. leckenbyi*, †*O. murrayi*; STRANGWAYS (266) p. 15.
Ophiolepisinae, defined with list of genera; DELAGE (54) p. 149.
Ophioleuce n. g. of *Ophiolepididae* (p. 32) for *Ophiocten depressum* Lym., & *O. seminudum* n. sp., Sulu Archipel. & Ceram, 120–1633 m.; KOEHLER (143) p. 33, pl. ii.

- Ophiolipus* (seu *-lypus*); DELAGE (54) p. 150. *O. granulatus* (p. 21), *O. levis* n. sp., Gilolo passage, 469–835 m. (p. 21, pl. iv); KOEHLER (143).
- Ophiolophus*; DELAGE (54) p. 156. *O. novarae*, holotype redescri.; KOEHLER (144) p. 117 & figg.
- Ophiomastix*; DELAGE (54) p. 155. *O. venosa*, topotype descr.; KOEHLER (144) p. 73, figg.
- Ophiomastus*; DELAGE (54) p. 152, figg. *O. perplexus* n. sp., G. of Boni & Timor, 828–1158 m. (p. 29, pl. iii), *O. tumidus* (p. 30); KOEHLER (143).
- Ophiomaza*; DELAGE (54) p. 156. *O. cacaotica*; HERDMAN (120) p. 147.
- Ophiomidas* n. g. of *Ophiolepididae* (p. 26) for *O. alatum*, Macassar Str., 1301 m. (p. 26, pl. v) & *O. reductum*, near Simbawa Id., 2060 m. (p. 27, pl. v), n. spp.; also *Ophiozona dubia* (p. 28); KOEHLER (143).
- Ophiomitra*; DELAGE (54) p. 154: Verrill's division into *Ophiomitra*, *Ophioplinthaca*, & *Ophiomitrella*, accepted; KOEHLER (143) p. 122.
- Ophiomitrella* rediagnosed (p. 123), *O. barbara*, Banda sea, 310 m. (p. 133, pls. xxvi, xxvii), *O. languida*, Macassar, 450 m. (p. 135, pl. xxix), *O. moniliformis*, Molucca sea, 2081 m. (p. 136, pl. xxvii), *O. mutata*, Banda sea, 204–304 m. (p. 134, pl. xxx), *O. placida*, Timor & Banda sea, 204–304 m. (p. 137, pl. xxxi): all n. spp.; KOEHLER (143).
- Ophiomoeris* n. g. of *Ophiolepididae* (p. 16), with genotype *O. spinosa* n. sp., Sulu and Banda seas, 204–1901 m. (p. 17, pl. iv), also *Ophioceramis clausa*, *obstricta*, and *tenera*; KOEHLER (143).
- Ophiomusium*; DELAGE (54) p. 150, fig. *O. altum* n. sp., Macassar Str., 2029 m. (p. 57, pl. x), *O. elegans*, discussed (p. 66), *O. fallax* n. sp., Gilolo passage, 469 m. (p. 56, pls. ix, x); KOEHLER (143). + *O. ferrugineum*, redescri.; LEUTHARDT (152) p. 110, pl. ii. *O. impurum* n. sp., Banda sea, 120–400 m. (p. 64, pl. x), *O. lunare*, *O. lymani* (p. 58), *O. properum* n. sp., N. of Sumbawa & Macassar Str., 695–724 m. (p. 62, pl. x), *O. relictum* n. sp., Gilolo passage, 469 m. (p. 61, pl. x), *O. sanctum* n. sp., Molo Str. and Timor, 54–216 m. (p. 59, pl. xi), *O. scalare*, discussed (p. 65), *O. serratum* (p. 66), *O. validum*, and young, compared with *O. lunare* (p. 59); KOEHLER (143).
- Ophiomyces*; DELAGE (54) p. 153. *O. delata* n. sp., Sulu Archipel. and Banda sea, 350–4239 m.; KOEHLER (143) p. 100, pls. xvii, xviii.
- Ophiomytis* n. g. of *Ophiacanthidae*, with genotype *O. weberi* n. sp., Timor, 520 m.; KOEHLER (143) p. 142, pl. xviii.
- Ophiomyxa*, descr.; DELAGE (54) p. 146 & fig. *O. ? juv.*; HERDMAN (120) p. 147. *O. brevispina*; MARTENS (185). *O. vivipara*; LUDWIG (164) p. 695.
- Ophioncus*; DELAGE (54) p. 148.
- Ophionema*; DELAGE (54) p. 155.
- Ophioneuthys*; DELAGE (54) p. 155.
- Ophionereis*; op. cit. p. 153. *O. ? sp.*; HERDMAN (120) p. 146. *O. fusca*, a cotype; KOEHLER (144) p. 72 & figg.
- Ophiopaepale*; DELAGE (54) p. 150. *O. goesiana*, holotype redescri.; KOEHLER (144) p. 57 & figg.
- Ophiopallas* n. g. of *Ophiodermatidae*, with genotype *O. paradoxa* n. sp., Macassar, Gilolo Passage, and Banda sea, 204–450 m.; KOEHLER (143) p. 12, pl. iii.
- Ophiopeza*; DELAGE (54) p. 149. *O. aequalis* (p. 10), *O. custos*, referred to *Ophioplax* (p. 67); KOEHLER (143).
- Ophiopezella*; DELAGE (54) p. 149.
- Ophiopholis*; op. cit. p. 153. *O. aculeata*; GRIEG (106) p. 30: KIAER (140): MICHAÏLOVSKIJ (192) p. 173: ÖSTERGREN (204): descr., range; CLARK (38) p. 559, pls. v, vii.
- Ophiophragmus*; DELAGE (54) p. 153.
- Ophiophthirius*; DELAGE (54) p. 157.

- Ophiophyllum*; DELAGE (54) p. 150 & figg.
Ophiopinax; DELAGE (54) p. 149.
Ophioplax; op. cit. p. 153. *O. custos* (Koehl. sub *Ophiopeza*) discussed; KOEHLER (143) p. 67.
Ophiopleura; DELAGE (54) p. 150. *O. aurantiaca*, descr., compared with *O. borealis*; GRIEG (106) p. 17 & fig. *O. borealis*; op. cit. p. 15: MICHAÏLOVSKIJ (192) p. 171.
Ophioplinthaca, diagnosis (p. 123), *O. chelys* (p. 131), *O. citata* n. sp., Banda sea and Gilolo Passage, 204-469 m. (p. 130, pl. xxiv), *O. miranda* n. sp., Banda sea, 984 m. (p. 123, pl. xxxi), *O. mitis* n. sp., ibid., 204-304 m. (p. 127, pl. xxv), *O. pulchra* n. sp., Malay Archipel., 304-522 m. (p. 125, pl. xxvii), *O. rudis* (Koehl. sub *Ophiomitra*) (p. 132), *O. vicina* n. sp., Banda sea, 1595 m. (p. 129, pl. xxv); KOEHLER (143).
Ophioplinthus; DELAGE (54) p. 150.
Ophioplocus; DELAGE (54) p. 150.
Ophiopsammium; DELAGE (54) p. 156.
Ophiopsila; op. cit. p. 153. *O. aranea*; MAR. BIOL. ASS. (184) p. 209.
Ophiopteris; DELAGE (54) p. 155.
Ophiopteron; op. cit. p. 156, figg. *O. elegans*; HERDMAN (120) p. 147: wide distrib.; BELL in op. cit. p. 148.
Ophiopus; DELAGE (54) p. 153. *O. arcticus*; GRIEG (106) p. 30.
Ophiopyren; DELAGE (54) p. 149, fig. *O. delatum* n. sp., Java sea, 538 m.; KOEHLER (143) p. 10, pl. iii.
Ophiopyrgus; DELAGE (54) p. 150, figg. *O. depressus*, Macassar Str., 2029 m. (p. 31, pl. iv), *O. trispinosus*, Malay Archipelago, 120-1914 m. (p. 30, pl. v): n. spp.; KOEHLER (143).
Ophiosciasma; DELAGE (54) p. 155.
Ophioscotex; loc. cit. *O. glacialis*; GRIEG (106) p. 32: slight variations; MICHAÏLOVSKIJ (192) p. 174. *O. pertinax* n. sp., Banda sea, 404 m.; KOEHLER (143) p. 145, pl. xxv. *O. purpureus*; GRIEG (106) p. 32.
Ophiophaera; DELAGE (54) p. 157: systematic position uncertain (p. 117), *O. insignis*, a cotype descr. (p. 116, figg.); KOEHLER (144).
Ophiostigma; DELAGE (54) p. 153.
Ophiothamnus; op. cit. p. 154. *O. stultus* n. sp., Malay Archipel., 794-1158 m.; KOEHLER (143) p. 141, pls. xxv, xxvi.
Ophiothela; DELAGE (54) p. 156.
Ophiothotia; op. cit. p. 153. *O. multispina* n. sp., Malay Archipel., 216-567 m.; KOEHLER (143) p. 99, pl. xxxiii.
Ophiothrichoides; DELAGE (54) p. 156.
Ophiothrix, descr.; op. cit. p. 155, figg.: variability; BELL in HERDMAN (120) p. 150. *O. aristulata*; KOEHLER (143) p. 151. *O. ? aspidota*; HERDMAN (120) p. 146: holotype redescri., also specimen fr. Ceylon, Brock's specimen referred to *O. bedoti*; KOEHLER (144) p. 87, figg. *O. capillaris*, variations; KOEHLER (143) p. 151. *O. carinata*, a cotype redescri. (p. 90, figg.), *O. ciliaris*, cotypes redescri. (p. 100, figg.); KOEHLER (144). *O. clarescens* n. sp., Banda sea, 304 m.; KOEHLER (143) p. 150, pls. xxix, xxx. *O. comata*, holotype redescri., distinguished fr. specimens so named by Marktanner, de Loriol, & Koehler; KOEHLER (144) p. 105, figg. *O. crassispina*, Sumbawa Id., 274 m. (p. 147, pls. xxviii-xxx), *O. deposita*, Malay Archipel., 204-520 m. (p. 146, pl. xxix): n. spp.; KOEHLER (143). *O. elegans*, holotype redescri.; KOEHLER (144) p. 110 & figg. *O. fragilis*; GRIEG (106) p. 32: KIAER (140): MACBRIDE (172): MALARD (179) p. 192: MAR. BIOL. ASS. (184) p. 210: NOBRE (198) p. 54, & (199): RETZIUS (226) p. 27: ZIEGLER (298). *O. fumaria*, holotype redescri. (p. 77 & figg.), *O. marenzelleri* n. sp., Japan, referred to *O. stelligera* by Marktanner (p. 103, figg.), *O. merguensis*, holotype distinguished fr. *O. ciliaris* (p. 102); KOEHLER (144). *O. ? nereidina*; HERDMAN (120) p. 146.

- O. picteti*, holotype compared with Brock's *O. foveolata*, which is syn. (p. 110), *O. proteus* n. sp., based on *O. comata* Koehler, 'Investigator' coll. (p. 109), *O. roseo-coerulans*, cotypes redescri. (p. 97, figg.), *O. smaragdina*, a cotype redescri. (p. 92, figg.), *O. spongicola*, redescri. (p. 95, figg.), *O. stabilis* n. sp., S. E. Japan (p. 84, figg.), *O. tenera*, holotype redescri. (p. 113, figg.), *O. triglochis*, redescri. (p. 81, figg.); KOEHLER (144). *O. viator* n. sp., Banda sea, 304 m.; KOEHLER (143) p. 148, pl. xxxi. *O. virgata*, Brock's specimen descri.; KOEHLER (144) p. 80 & fig.
- Ophiothyreus*; DELAGE (54) p. 150. *O. goesii*, cotypes redescri.; KOEHLER (144) p. 59 & fig.
- Ophiotoma*; DELAGE (54) p. 155. *O. assimilis* n. sp., Ceram & Timor, 567-918 m.; KOEHLER (143) p. 144, pl. xxviii.
- Ophiotrema*; DELAGE (54) p. 155.
- Ophiotritinae*, defined with list of genera; DELAGE (54) p. 155.
- Ophiotrochus*; op. cit. p. 150. *O. panniculus*; KOEHLER (143) p. 15.
- Ophiotypa*; DELAGE (54) p. 152.
- Ophiozona*; op. cit. p. 150, fig.: content discussed (p. 25), *O. casta* n. sp., Banda sea, 560 m. (p. 22, pls. v, vi), *O. depressa* n. var. *media*, N. Celebes & Timor, 918-1264 m. (p. 24, pl. iv); KOEHLER (143). *O. dubia*, vide *Ophiomidas*. *O. molesta* n. sp., Sulu Archipel, 1270 m.; KOEHLER (143) p. 23, pl. vi.
- Ophiura*, descr.; DELAGE (54) p. 149, figg. *O. sp.*; HERDMAN (120) p. 146: RETZIUS (226) p. 27: † ROWE (235) p. 293. *O. albida*; GRIEG (106) p. 21: MALARD (179) p. 192: MAR. BIOL. ASS. (184) p. 208: ÖSTERGREN (204). *O. brevispina*, descr., range; CLARK (38) p. 558, pls. v, vii. *O. ciliaris*; GRIEG (106) p. 21: MAR. BIOL. ASS. (184) p. 208: NOBRE (199). *O. divisa*, syn. of *O. inornata*; KOEHLER (143) p. 4, 41. *O. nodosa*; GRIEG (106) p. 26: MICHAÏLOVSKIJ (191) & (192) p. 173. *O. robusta*; GRIEG (106) p. 26: MICHAÏLOVSKIJ (192) p. 172. *O. sarsi*; loc. cit.: a cold area var.; GRIEG (106) p. 21.
- † *Ophiurella speciosa*; WALTHER (281) p. 166.
- Ophiurina*?; BATHER in FOX (84) p. 752 [proves to be a new genus, 1905].
- Ophiuropsis*; DELAGE (54) p. 158.
- † *Palophiuridae*, descr.; DELAGE (54) p. 144 et sq.
- Paramphiura*; DELAGE (54) p. 152.
- Pectinura*; op. cit. p. 149. *P. conspicua*; KOEHLER (143) p. 9, pl. i. *P. gorgonia*; HERDMAN (120) p. 146. *P. heros* (p. 9), *P. honorata* n. sp., Banda sea, 304 m. (p. 8, pl. ii); KOEHLER (143). *P. intermedia*; HERDMAN (120) p. 146. *P. modesta* n. sp., Java sea, 330 m.; KOEHLER (143) p. 7, pl. ii.
- † *Protaster*, descr.; DELAGE (54) p. 146.
- Sthenocephalus*; DELAGE (54) p. 159.
- Streptophiurida*, defined; DELAGE (54) p. 145 & 146.
- Trichaster*, descr.; DELAGE (54) p. 158 & figg.
- Trichasterinae*, defined, with list of genera; loc. cit.
- Zygophiurida*, divided into Suborders *Brachy-*, and *Nect-ophiuridae*; DELAGE (54) p. 148.

(F.) CRINOIDEA*.

Diagnosis of class; HAMANN (112) p. 1415. *Crinoidia*, defined and classified in Orders, 1. *Larviformida*, 2. *Fistulida*, 3. *Camerida*, 4. *Articulida*; DELAGE (54) p. 375.

† *Acrocrinus*; DELAGE (54) p. 383, fig.

* Names that are sometimes given the termination *-ites* (e.g. *Pentacrinites*) are here treated as always ending in *-us*.

- †*Actinocrinus* descr. ; op. cit. p. 385. *A. multiramosus* n. var. *altidorsatus*, Keokuk, Washington co. Ind. ; ROWLEY in GREENE (105) p. 187, pl. lvii.
- †*Actinocrinusinae*, defined with list of genera ; DELAGE (54) p. 385.
- Actinometra* ; op. cit. p. 395, fig. *A. multiradiata*, syzygies (p. 157), *A. notata*, variations from type (p. 157); *A. parvicirra*, variations from type (p. 158, pl.) ; CHADWICK (35).
- †*Aesiocrinus* ; SCHUCHERT (247) pl. ci.
- †*Allagecrinus* ; DELAGE (54) p. 377.
- †*Allegecrinusinae*, defined, with list of genera ; loc. cit.
- †*Ancyrocrinus* ; JAEKEL (132). *A. bulbosus* ; CLARKE & LUTHER (40) p. 52.
- Antedon* descr. ; DELAGE (54) p. 339, 394, figg. ; SCHUETZE (251) p. 157.
- A. anceps* ; CHADWICK (35) p. 157. *A. barentsi* vide *A. eschrichti*. *A. bella* & var. *brunnea* ; CHADWICK (35) p. 155. *A. bifida* ; MAR. BIOL. ASS. (184) p. 207 : NOBRE (198) p. 52 : measurements ; GRIEG (107) p. 23, fig. : v. etiam *A. rosacea*. *A. carinata* ; CHADWICK (35) p. 154.
- A. celtica* vide *A. eschrichti*. *A. eschrichti* incl. *A. celtica*, *quadrata*, *barentsi*, fixed stage, measurements ; GRIEG (107) p. 13, 23 : incl. *A. barentsi*, local variations ; MICHAÏLOVSKIJ (192) p. 175. †*A. formosus* ; WALTHER (281) p. 165. *A. hirsuta* ; ANDERSSON (10). *A. indica*, *A. marginata*, *A. milberti*, syzygies (p. 154), *A. okelli* n. sp. of *Palmata* group, W. coast Ceylon & G. of Manaar, 8-36 fm. (p. 155, pl.) ; CHADWICK (35). *A. petasus*, measurements (p. 23, fig.), *A. phalangium* (p. 6, 23) ; GRIEG (107). †*A. pinnatus* ; WALTHER (281) p. 158, 165. *A. proluxa* ; MICHAÏLOVSKIJ (192) p. 176 : measurements, comparison with *A. tenella* et al., cirrals, syzygies, genital pinnules ; GRIEG (107) p. 20, 22, & fig. *A. quadrata*, provisionally kept distinct from *A. eschrichti* (q. v.) ; MICHAÏLOVSKIJ (192) p. 176. *A. reynaudi*, redescri. ; CHADWICK (35) p. 156, pl. †*A. rhodanicus*, Suabia, comparative measurements ; SCHUETZE (251) p. 156, pl. ii. *A. rosacea* ; LUDWIG (164) p. 699 : v. etiam *A. bifida*. *A. serripinna*, Ceylon, variations from type ; CHADWICK (35) p. 153, pl. *A. tenella*, measurements, v. sub *prolixa*, fixed stage ; GRIEG (107) p. 20, 22 & fig. *A. varipinna* ; CHADWICK (35) p. 157.
- Antedoninae* defined, with list of genera ; DELAGE (54) p. 394.
- †*Aorocrinus* :—*A. cauliculus*, *A. pocillum*, *A. praecursor* ; CLARKE & LUTHER (40) p. 52.
- †*Apiocrinus* :—*A. milleri* ; SIEMIRADZKI (255) p. 139. *A. munsterianus*, *A. polycyphus* ; MAIRE (178). *A. rosaceus* ? ; ROLLIER (230) p. 464.
- †*Apiocrinusinae*, defined, with list of genera ; DELAGE (54) p. 390.
- †*Arachnocrinus extensus*, divergences from type, which came as this from Upper Helderberg ; ROWLEY in GREENE (104) p. 180, 184, pl. liv.
- †*Archaeocrinus* ; DELAGE (54) p. 386, fig. *A. desideratus* (p. 63), *A. microbasalis* (p. 62), *A. pyriformis* (p. 61, 62, 63) ; AMI (7).
- †*Arthracantha punctobrachiata*, arms ; WOOD (291) p. 81, pl. xvi.
- Articulida*, Order, defined (p. 376) descr. & divided into Suborders 1. *Flexibulidae*, 2. *Canaliculidae* (p. 387) ; DELAGE (54).
- †*Austriocrinus meyeri*, *rothpletzi*, *zitteli* may all be from one sp. of *Isocr.* ; JAEKEL (133).
- †*Balanocrinus*, vide sub *Pentacrinus*.
- †*Barrandeocrinus* ; DELAGE (54) p. 384, fig.
- †*Barycrinus hoveyi* ; WHITEFIELD (286) pls.
- Bathycrinus* discussed ; DELAGE (54) p. 391, figg. *B. carpenteri*, measurements, stem, basals, union of Br. ; GRIEG (107) p. 8.
- †*Batocrinus* descr. ; DELAGE (54) p. 384, fig. *B. crassitestus* n. sp., Warsaw Limest., Lanesville, Ind. (p. 172, pl. li), *B. davisi*, redescri. with n. varr. *lanesvillensis* et *sculptus* ; ibid. (p. 171, 172, 174, pl. li),

- B. icosidactylus*, redescri. (p. 173, 174, pl. li), *B. irregularis*, redescri. (p. 171, pl. li), *B. magnirostris* n. sp., Warsaw Limest., Lanesville, Ind. (p. 170, pl. li); ROWLEY in GREENE (103). *B. spergenensis*; ROWLEY in GREENE (105) p. 188, pl. lvii.
- †*Batocrinusinae*, defined with list of genera; DELAGE (54) p. 384.
- †*Botryocrinus americanus* n. sp., Hamilton group, Charlestown, Ind.; ROWLEY in GREENE (104) p. 184, pl. liv.
- †*Bourgueticrinus*:—*B.* sp., dwarf; ROWE (235) p. 256, 266, 293. *B.* sp. (nipple-headed); DIBLEY (62). *B. ellipticus*; COLLET (44) p. 77: HINDE (125): TÖRNEBOHM (267) p. 143.
- †*Cainocrinus andreae* vide sub *Pentacrinus*.
- Calamocrinus* descri.; DELAGE (54) p. 390, figg.
- †*Calceocrinus*; op. cit.; DELAGE (54) p. 379, fig. *C. allenii* n. sp., Clinton group, Pike co., Mo.; ROWLEY (236) p. 275, pl. xvi. *C. clarus*; CLARKE & LUTHER (40) p. 55.
- †*Calceocrinusinae*, defined with list of genera; DELAGE (54) p. 379.
- †*Callicrinus*; DELAGE (54) p. 384, fig.
- †*Camarocrinus* (et err. *Camerocr.*), syn. *Lobolithus*; FRÍO (88): JAEKEL (132): history of opinion, mode of occurrence in America and Bohemia, diagnosis, incl. *Lobolithus* but not *Scyphocr.*, believed to be a float (p. 253-269), *C. saffordi*, descr. (p. 270, pl. xl), *C. stellatus*, descr. (p. 269, pl. xliv), *C. ulrichi*, descr. (p. 271, pls. xli-xliii) with n. var. *stellifer*, Lower Helderberg (p. 272, pls. xl, xli); SCHUCHERT (249).
- †*Camerida*, Order, defined (p. 376) descr. (p. 382) with Famm. *Platycrinus*-, *Glyptocrinus*-, *Batocrinus*-, *Actinocrinus*-, *Rhipidocrinusinae*; DELAGE (54).
- Canaliculidae*, Sub-Order, defined (p. 388) with Famm. *Encrinus*-, *Uintacrinus*-, *Apiocrinus*-, *Rhizocrinus*-, *Holopus*-, *Saccocom*-, *Pentacrinus*-, *Antedoninae* (p. 389); DELAGE (54).
- †*Catillocrinus*; DELAGE (54) p. 379.
- †*Catillocrinusinae*, defined, with list of genera; loc. cit.
- †*Cleiocrinus grandis*; AMI (7) p. 63.
- †*Coccocrinus*; DELAGE (54) p. 377.
- †*Compsoocrinus*; DELAGE (54) p. 384, fig.
- †*Cordylocrinus*? *dubius* n. sp., Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 272, pl. xvi.
- †*Cothocrinus*; DELAGE (54) p. 392.
- †*Cotylederma* sp.; SCHAEFER (242) p. 34.
- †*Crotalocrinus*; DELAGE (54) p. 380, figg.
- †*Cupressocrinus*; DELAGE (54) p. 380, fig.
- †*Cyathidium holopus*, habitat; HENNIG (115) p. 55: RAVN (223) p. 351: TÖRNEBOHM (267) p. 143.
- †*Cyathocrinus* descri.; DELAGE (54) p. 379, fig. *C. bulbosus*; CLARKE & LUTHER (40) p. 43. *C. ? ovalis* n. sp., "almost certainly not *Cyathocr.*", Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 271, pl. xvi. *C. ramosus*?; KITTL (141) p. 686.
- †*Cyathocrinusinae*, defined with list of genera; DELAGE (54) p. 379.
- †*Dadocrinus gracilis*; KITTL (141) p. 539.
- †*Decadocrinus*; DELAGE (54) p. 381, fig.
- †*Dendrocrinus* descri.; DELAGE (54) p. 380. *D. acutidactylus*, *D. congregatus*, *D. conjugans*; AMI (7) p. 62.
- †*Dendrocrinusinae*, defined with list of genera; DELAGE (54) p. 380.
- †*Dimeroocrinus* [fig. 479, showing dorsal nerve-cords is not this genus but *Encrinus*, belonging to a different Order]; op. cit. p. 386.
- †*Dolatocrinus*, small value of arm-branching in classification (p. 69), *D.* sp. (p. 73, fig.), *D. amplus* (p. 78), *D. asterias* n. sp., Devonian, Upper Traverse Limest., Michigan, & abnormality (p. 71, pl. xvi), *D. caelatus* (p. 77), *D. charlestownensis* (p. 74), *D. costatus* n. sp., Devonian,

- Mid. Traverse Limest., Michigan (p. 70, pl. xvi); WOOD (291). *D. excavatus*; op. cit. p. 78: variations in IBr.; ROWLEY in GREENE (105) p. 191, pl. lvii. *D. glyptus*; CLARKE & LUTHER (40) p. 49, 52: WOOD (291) p. 76. *D. grandis* (p. 79), *D. greeni*, discussed (p. 74), *D. hammelli* (p. 75), *D. indianensis* (p. 77); WOOD (291). *D. intermedius*; CLARKE & LUTHER (40) p. 52. *D. lacus*; WOOD (291) p. 73. *D. liratus*; CLARKE & LUTHER (40) p. 49, 52. *D. major* (p. 76), *D. ornatus*, distinguished from *D. glyptus* (p. 76), *D. pulchellus* (p. 79), *D. salebrosus*, variation (p. 78); WOOD (291). *D. triadactylus*; GRABAU (102A) p. 193, 194: incl. *D. aplatus*; WOOD (291) p. 74. *D. troosti*; CLARKE & LUTHER (40) p. 52. *D. venustus* (p. 79), *D. wachsmuthi* **nom. nov.** pro *D. lyoni* W. & Sp. non Mill. & Gurl. (p. 77); WOOD (291).
- †*Edriocrinus pyriformis*; CLARKE & LUTHER (40) p. 43.
- †*Encrinurus* descr. [vide sub *Dimerocr.*]; DELAGE (54) p. 389. *E. cassianus*; FIEDLER (77): KITTL (141) p. 703 & cf. *cassianus*, p. 645. *E. granulatus*; op. cit. p. 579, 703, & cf. *granulosus*, p. 576. *E. liliiformis*; LANGENHAN (150): ZLATARSKI (299). *E. cf. moniliformis*; DEL CAMPANA (56) p. 554. *E. silesiacus*; ZLATARSKI (299).
- †*Encrinurinae* defined with list of genera; DELAGE (54) p. 389.
- †*Erisocrinus* sp.; BEEDE & ROGERS (21).
- †*Eugeniocrinus*; DELAGE (54) p. 392, fig. *E. hoferi*; MAIRE (178).
- †*Euspirocrinus*; DELAGE (54) p. 380.
- Fistulida*, Order, defined (p. 375), descr. (p. 377) with Famm. *Hybocrinus*-, *Heterocrinus*-, *Calceocrinus*-, *Cutillocrinus*-, *Cyathocrinus*-, *Dendrocrinus*-, *inae*; DELAGE (54).
- †*Flexibilidae*, Suborder, defined with Famm. *Ichthyocrinus*-, *Marsupitesinae*; DELAGE (54) p. 388.
- †*Forbesocrinus*:—*F.* sp.; PEACH (209) p. 850. *F. lobatus*; CLARKE & LUTHER (40) p. 55.
- Gasterocomidae*, vide *Tripleurocrinus*.
- †*Gennaeocrinus*:—*G. carinatus*; WOOD (291) p. 80. *G. eucharis*; CLARKE & LUTHER (40) p. 52. *G. kentuckiensis*, extra IBr.; WOOD (291) p. 80 & fig. *G. nyssa*; CLARKE & LUTHER (40) p. 52. *G. simulans* **n. sp.**, Hamilton group, Charlestown, Ind.; ROWLEY in GREENE (104) p. 183, pl. liv.
- Gephyrocrinus*; DELAGE (54) p. 393.
- †*Gilbertocrinus*; op. cit. p. 386, fig. *G. indianensis*; WOOD (291) p. 81. *G. spinigerus*; CLARKE & LUTHER (40) p. 52.
- †*Gissocrinus*? *problematicus* **n. sp.**, Clinton group, Louisiana, Mo.; ROWLEY (236) p. 277, pl. xvi.
- †*Glyptocrinus*; DELAGE (54) p. 383. *G. insperatus* **n. sp.** (p. 275) & **n. varr. pentagonus** (p. 276), *carinatus* (p. 278), Clinton group, Pike co., Mo.; ROWLEY (236) pl. xvi. *G. cf. priscus* (p. 71), *G. ramulosus* (p. 61, 62); AMI (7).
- †*Glyptocrinusinae* defined with list of genera; DELAGE (54) p. 383.
- †*Haplocrinus* descr.; DELAGE (54) p. 377, fig.
- †*Haplocrinusinae* defined; DELAGE (54) p. 377.
- †*Herpetocrinus* [fig. 450 "*Bras de H. fletcheri*" is really a view of the whole animal]; DELAGE (54) p. 379.
- †*Heterocrinus*; DELAGE (54) p. 379. *H. simplex canadensis*; AMI (7) p. 64.
- †*Heterocrinusinae* defined with list of genera; DELAGE (54) p. 379.
- Holopus* descr.; op. cit. p. 392, figg. *H. rangi*, habitat; HENNIG (115) p. 57.
- †*Holopusinae* defined with list of genera; DELAGE (54) p. 392.
- †*Hybocrinus* descr.; DELAGE (54) p. 378.
- †*Hybocrinusinae* defined with list of genera; loc. cit.
- †*Hydreionocrinus globularis*; PEACH (209) p. 850.

- Hyocrinus* descr.; DELAGE (54) p. 392.
Hyocrinusinae defined with list of genera; loc. cit.
- †*Hystricrinus depressus*; CLARKE & LUTHER (40) p. 65.
- †*Ichthyocrinus*; DELAGE (54) p. 388.
- †*Ichthyocrinusinae* defined with list of genera; loc. cit.
- †*Iocrinus suberassus*; AMI (7) p. 65.
Isocrinus vide sub *Pentacrinus*.
- †*Lampteroocrinus? comptus* n. sp., detached plates, Clinton group, Louisiana, Mo.; ROWLEY (236) p. 279, pl. xvi.
- †*Larviformida*, Order, defined (p. 375) with Famm. *Haploocrinus*, *Allageocrinus*, & *Stephanocrinusinae* (p. 377); DELAGE (54).
- †*Lecanocrinus hemisphericus* n. sp., Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 271, pl. xvi.
- †*Lichenocrinus*; JAEKEL (132). *L. crateriformis*; AMI (7) p. 65.
Lobolithus (vide etiam *Camarocr.*), *L. sp.*; FRIČ (88): Probably a nodule; PERNER in Abstract.
- †*Mariocrinus*; DELAGE (54) p. 383 & fig.
- †*Marsupites*; JAEKEL (132): descr.; DELAGE (54) p. 388. *M. testudinarius*; HINDE (125); ROWE (235) p. 293; WRIGHT (294).
- †*Marsupitesinae* defined with list of genera; DELAGE (54) p. 388.
- †*Megistocrinus*; op. cit. p. 385, fig. *M. abnormis*, ornament; WOOD (291) p. 63, pl. xv. *M. circulus?*, divergences from type; ROWLEY in GREENE (104) p. 181, pl. liv. *M. concavus*; WOOD (291) p. 65.
M. depressus; CLARKE & LUTHER (40) p. 52, incl. *M. ornatus* (p. 64), *M. expansus*, loss of arms (p. 66), *M. farnsworthi* (p. 64), *M. latus* (p. 66), *M. multidecoratus* (p. 65), *M. nodosus*, variations fr. type (p. 65); WOOD (291). *M. ontario*; CLARKE & LUTHER (40) p. 48, 52. *M. regularis* n. sp., Devonian, Mid. Traverse Limest., Michigan (p. 59, pl. xv), *M. rugosus*, variations fr. type (p. 63), *M. sphaeralis* n. sp., Devonian, Mid. Traverse Limest., Michigan, also abnormality (p. 60, pl. xv); WOOD (291). *M. spinosulus*; op. cit. p. 65: notes; ROWLEY in GREENE (104) p. 182, pl. liv. *M. tuberosus* n. sp., Devonian, Upper Traverse Limest., Michigan, also young; WOOD (291) p. 57, pls. xv, xvi.
- †*Melocrinus*; DELAGE (54) p. 383, fig. *M. clarkei* (p. 62), *M. gracilis* (p. 52); CLARKE & LUTHER (40). *M. wittenbergensis* n. sp., Delthyris Limest., Silurian, Wittenberg, Mo.; ROWLEY (236) p. 274, pl. xvi.
Metacrinus rotundus incl. *M. interruptus*; SPERRY (265).
- †*Millericrinus*:—*M. cf. adneticus*; MARIANI (183) p. 153, 154. *M. echinatus*; STRANGWAYS (266) p. 40, 49. *M. escheri*, *M. goupilianus*; MAIRE (178). *M. hausmanni*; MARIANI (183) p. 154. *M. horridus*; MAIRE (178). *M. longimanus*, *M. mespiliiformis*, *M. nobilis*; WALTHER (281) p. 165. *M. nodotianus*, *M. regularis*; MAIRE (178). *M. rosaceus*; WALTHER (281) p. 165.
- †*Myrtillocrinus*; DELAGE (54) p. 380, fig. *M. americanus*; CLARKE & LUTHER (40) p. 43.
- †*Parisocrinus*; DELAGE (54) p. 380, figg.
- †*Pentacrinus* [including *Balanocr.*, *Cainocr.*, *Isocr.*]; op. cit. p. 394, figg. *P. sp.*; BOEHM (28) p. 7, pl. i. *P. sp.* columnars of special shape; ROWE (235) p. 243, 293. *P. alternans* d'Orb; LORIOU (162) p. 62. *P. amblyscalaris*; MAIRE (178); SIEMIRADZKI (255) p. 139. *Cainocr. andreae* & var. nov. major, descr.; LEUTHARDT (152) p. 93, pl. ii, fig. *P. cf. andreae*; MADSEN (176) pp. 172, 200, pl. vi. *P. angulatus*; SCHAEFER (242) p. 31. *P. annulatus?*; STRANGWAYS (266) p. 67, 73. *Isocr. australis*, n. var. *albascopularis*, Upper Cretaceous, White Cliffs, N.S.W.; ETHERIDGE (74) p. 251, pl. xxviii. *P. bajocensis*; RICHE (228) p. 210. *P. basaltiformis*; MARIANI (183) p. 153, 154; SCHAEFER (242) p. 34; ZLATARSKĀ (299). *P. buchi*; COLLET (44)

- p. 77, 79. *P. desori*; SIEMIRADZKI (255) p. 139. *P. fittoni*; FEARN-SIDES (76): STRANGWAYS (266) p. 78. *P. fossilis*; SCHUCHERT (247) pl. cii. *P. georeyi* n. sp., Valangian, Mallevall, Isère, columnals only; LORIOLO (162) p. 59, pl. iv. *Isocr. kolsaticus* n. sp., Senonian, Holstein; JAEKEL (133) p. 195. *P. lanceolatus*; JAHN (135). *P. leuthardi*, redescri.; LEUTHARDT (152) p. 102, pl. iii. *P. lissajouxii* n. sp., Hauterivian, St. Pierre de Cherenne, Isère, columnals only (p. 63, pl. iv); *P. mallevallensis* n. sp., Neocomian, Mallevall, Isère, columnals only (p. 60, pl. iv); *P. neocomiensis* d'Orbigny non Desor is perhaps *P. mallevallensis* (p. 61), *P. peyroulensis* n. sp., Hauterivian, Peroules, Basses-Alpes, columnals only (p. 62, pl. iv); LORIOLO (162). *P. cf. punctiferus*; ZLATARSKI (299). *P. scalaris*; SCHAEFER (242) p. 32. *P. sigmaringensis*; ROLLIER (230) p. 464. *P. subangularis*; SCHAEFER (242) p. 34; SCHUCHERT (247) pl. ci. *P. subteroides*; SCHAEFER (242) p. 34: sub *Balanocr.*; RZEHAKE (238) p. 148, & (239). *P. tuberculatus*; MARIANI (183) p. 138; SCHAEFER (242) p. 31. *P. vulgaris*; STRANGWAYS (266) p. 9, 15. *P. wiesbauri* n. sp., Mid. Lias, Moravia, columnals; RZEHAKE (238) p. 148, pl. i.
- Pentacrinusinae* defined with list of genera; DELAGE (54) p. 394.
- Pericchoocrinidae*, vide *Tylocrinus*.
- †*Periglyptocrinus billingsi*; AMI (7) p. 62, 63.
- †*Petalocrinus*; DELAGE (54) p. 380, fig.
- †*Phyllocrinus* aff. *nutantiformis*; DEL CAMPANA (55) p. 268.
- †*Pisocrinus*:—*P. glabellus* n. sp., Niagaran, Ste. Genevieve co., Mo. (p. 270, pl. xvi), *P. globosus*? "if distinct might be called *P. sphaericus*," ibid. (p. 270, pl. xvi), *P. gorbyi*?, descr. (p. 269, pl. xvi), *P. granulatus* n. sp., Niagaran, Ste. Genevieve co., Mo. (p. 269, pl. xvi); ROWLEY (236). *P. sphaericus* n. sp.? vide *P. globosus*. *P. (?) yassensis* n. sp. with n. var. *lobata* Silurian near Yass, N.S.W.; ETHERIDGE (75).
- †*Platycrinus* descr.; DELAGE (54) p. 383, figg. *P. eboraceus*; CLARKE & LUTHER (40) p. 48, 55. *P. laevis*, *P. ornatus*; DESTINEZ (59) p. M 145. *P. striobrachiatus*; WHITFIELD (286).
- †*Platycrinusinae* defined with list of genera; DELAGE (54) p. 383.
- †*Plicatocrinus fraasi*; WALTHER (281) p. 158.
- †*Porocrinus*; DELAGE (54) p. 380 & fig.
- †*Poteriocrinus*:—*P?* sp.; KITTL (141) pp. 666, 681. *P. crassus*; PEACH (209) pp. 842, 849, 850. *P. diffusus*; CLARKE & LUTHER (40) p. 52. *P. fusiformis*; HIND (123) p. 192. *P. nereus*, *P. nycteus*; CLARKE & LUTHER (40) p. 52.
- †*Rheteocrinus*; DELAGE (54) p. 386, fig.
- †*Rhipidocrinus* descr.; DELAGE (54) p. 385.
- †*Rhipidocrinusinae* defined with list of genera; loc. cit.
- Rhizocrinus* descr.; op. cit. p. 391, figg. *R. lofotensis*; GRIEG (107) p. 12.
- †*Rhizocrinusinae* defined with list of genera; DELAGE (54) p. 391.
- †*Rhodocrinus*:—*R. gracilis*, *R. nodulosus*; CLARKE & LUTHER (40) p. 52. *R. pygmaeformis*; AMI (7) p. 61. *R. spinosus*; CLARKE & LUTHER (40) p. 52.
- †*Succocoma* descr.; DELAGE (54) p. 393. *S. pectinata* (p. 165), *S. schwertschlagerei* n. sp., Kimmeridgian, Solenhofen Plattenkalk (p. 166, fig.), *S. tenella* (p. 158, 165); WALTHER (281).
- †*Succocominae* defined with list of genera; DELAGE (54) p. 393.
- †*Scaphiocrinus longicaudatus* n. sp., Viséan, Belgium; FRAIPONT (85) p. 7, pl. i.
- †*Scyphocrinus* (vide etiam *Lobolithus*); DELAGE (54) p. 383. *S. elegans*; ROUSSEL (238) p. 16.
- †*Solanocrinus gracilis*; WALTHER (281) p. 165.
- †*Stephanocrinus*; DELAGE (54) p. 377.
- †*Stephanocrinusinae* defined; loc. cit.

- †*Stereocrinus*:—*S. barrisi*; WOOD (291) p. 79. *S.?* *indianensis*, notes; ROWLEY in GREENE (104) p. 182, pl. liv.
 †*Strotocrinus*; DELAGE (54) p. 385, fig.
 †*Synerocrinus*; DELAGE (54) p. 388, fig.
 †*Taxocrinus*; loc. cit., fig. *T. lobatus*; WOOD (291) p. 81.
Thaumatocrinus; DELAGE (54) p. 395, fig.
 †*Thylacocrinus*; DELAGE (54) p. 386, fig. *T. clarkei*; CLARKE & LUTHER (40) p. 52.
 †*Tripleurocrinus* n. g. of *Gasterocomidae* (p. 56), with genotype *T. levis* n. sp., Onondaga Limest., New York (p. 57 pl. xvi); WOOD (291).
 †*Tylocrinus* n. g. of *Periechocrinidae*, with genotype *T. novus* n. sp., Devonian, Upper Traverse Limest., Michigan, abnormality; WOOD (291) p. 66, pl. xvi.
 †*Uintacrinus*; JAEKEL (132): descr.; DELAGE (54) p. 389. *U.* sp.; DIBLEY (62): HINDE (125): ROWE (235) p. 293: WRIGHT (294). *U. socialis*; SCHUCHERT (248) pl. ciii: WHITEAVES (285).
 †*Uintacrinusinae* defined; DELAGE (54) p. 389.
 †*Vasocrinus sculptus*; WOOD (291) p. 81.

(G.) †CYSTIDEA*.

(including EDRIOASTEROIDEA).

- Cystoidia* divided into Orders *Amphorida*, *Rhombiferida*, *Diploporida*, *Edrioasterida*; DELAGE (54) p. 405.
Agelacrinus; DELAGE (54) p. 415, fig. *A. chapmani*; AMI (7) p. 61.
A. cincinmatiensis, anat.; SPENCER (264).
Amphorida Order defined, with Famm. *Aristocystis*-, *Anomalocystis*-, *Malocystis*-, & *Comarocystis*-inae; DELAGE (54) p. 405.
Anomalocystis, diagnosis, alleged anus, distinguished from *Ateleocystis* & *Placocystis* (p. 205), *A. cornutus* descr. (p. 206, pl. xl, fig.), *A. (?) disparilis* descr. (p. 207, fig.); SCHUCHERT (249).
Anomalocystisinae defined with list of genera; DELAGE (54) p. 407.
Apiocystinae, vide *Tetracystis*.
Apiocystis, diagnosis, distinguished from *Lepocrinites*. [*Lepadocr.*] & credited with *A. pentrematoides*, *Pseudocr. oblongus* pars, & *A. elegans*; SCHUCHERT (249) p. 210. *A. canadensis*, vide *Callocystis*. *A. elegans*, specimen from Hamilton, Ont., descr. (p. 212, pl. xxxiv), *A. ? huronensis*, holotype descr. (p. 212); SCHUCHERT (249). *A. ? imago*, vide *Hallicystis*. *A. ? tecumseth*, rejected; SCHUCHERT (249) p. 211.
Aristocystis descr.; DELAGE (54) p. 407, figg.
Aristocystisinae defined with list of genera; DELAGE (54) p. 407.
Asteroblastus; DELAGE (54) p. 413, figg.
Blastoidocrinus; DELAGE (54) p. 413.
Bolboporites americanus; AMI (8) p. 140.
Calix; DELAGE (54) p. 407 & fig.
Callocystis diagnosis, incl. *Anthocystis* (p. 242), *C. canadensis* (Bill. sub *Apiocystis*) incl. *C. tripectinatus* Ringueb. (p. 245, pl. xxxiv), *C. jewettii* descr. (p. 243 & fig., pl. xxxiv); SCHUCHERT (249).
Carpoida, summary of Jaekel's classification, which is rejected; DELAGE (34) p. 406.
Caryocrinusinae defined with list of genera, DELAGE (54) p. 411.
Caryocystis; DELAGE (54) p. 410, fig.

† All extinct.

* Names that are sometimes given the termination *-ites* (e.g. *Anomalocystites*) are here treated as always ending in *-us*, *-a*, or *-is*, as the case may be.

- Coelocystis*, diagnosis, genotype in *Hemicosmites subglobosus* Hall incl. *Sphaerocystis dolomiticus* Jaekel (p. 246), *C. subglobosus* descr., abnormality (p. 248, figg.); SCHUCHERT (249).
- Comarocystis*; DELAGE (54) p. 408.
- Comarocystisinae* defined; loc. cit.
- Cryptocrinus*; DELAGE (54) p. 412.
- Cryptocrinusinae* defined; loc. cit.
- Cyathocystis*; DELAGE (54) p. 415 & fig.
- Cyclocystoides*; DELAGE (54) p. 416, fig.
- Cystaster*; DELAGE (54) p. 415, fig.
- Cystoblastus*; DELAGE (54) p. 411, figg.
- Dendrocystis*; DELAGE (54) p. 408, fig.
- Diploporida* Order defined (p. 405) with Famm. *Sphaerionites*-, *Glyptosphaerites*-, *Mesocystis*-, *Gomphocystis*-inae (p. 412); DELAGE (54).
- Discocystis*, vide *Echinodiscus*.
- Echinodiscus* Worth. & Miller [i.e. *Discocystis* Greg.], treated as *Ech.*, *E. kaskaskiensis*, *E. optatus*, *E. sampsoni*; KLEM (142) p. 73.
- Echinoencrinus* descr.; DELAGE (54) p. 411, fig. *E. fenestratus* n. sp. Niagaran, Decatur co., Tenn., Troost MS. 1849, now first published & referred to *Tetracystis* (q. v.); SCHUCHERT (249) p. 219.
- Echinospaera* descr.; DELAGE (54) p. 410, figg. *E. aurantium*; HOLM (126) p. 56, fig.: WEYSSE (284) p. 89, fig.
- Echinospaeritesinae* defined with list of genera; DELAGE (54) p. 410.
- Edrioaster* descr.; DELAGE (54) p. 414, figg.
- Edrioasterida*, Order defined (p. 405) descr. (p. 414); DELAGE (54).
- Eucystis*; DELAGE (54) p. 412, fig.
- Glyptocystisinae* defined with list of genera; DELAGE (54) p. 411.
- Glyptosphaerites* descr.; DELAGE (54) p. 412.
- Glyptosphaeritesinae* defined with list of genera; loc. cit.
- Gomphocystis*; DELAGE (54) p. 413, fig.
- Gomphocystisinae* defined with list of genera; loc. cit.
- Halticystis*, diagnosis (p. 216), *H. elongata* (p. 217), *H. imago* (p. 216, fig.); SCHUCHERT (249).
- Hemicosmites* descr.; DELAGE (54) p. 411.
- Jaekelocystis* diagnosis (p. 222), *J. avellana* n. sp., Manlius formation, Keyser, W. Va. (p. 226 & fig., pl. xxxvii), *J. hartleyi*, descr. (p. 224 & fig., pl. xxxvii), *J. papillatus* n. sp., Manlius formation, Keyser W. Va. (p. 225, pl. xxxvii); SCHUCHERT (249).
- Lepadocrinus*, spelling *Lepocrinites* adopted, diagnosis (p. 213), *L. angelini* (p. 214), *L. gebhardii*, anal area (p. 215), *L. manlius* n. sp., Manlius formation, Keyser, W. Va. (p. 214 & fig., pl. xxxvii, xxxix); SCHUCHERT (249).
- Lepidodiscus*; DELAGE (54) p. 415, fig. *L. pileus*, anat.; SPENCER (264).
- Lepocrinites*, vide *Lepadocrinus*.
- Macrocystella* descr.; DELAGE (54) p. 410.
- Macrocystellinae* defined with list of genera; loc. cit.
- Malocystis*; DELAGE (54) p. 408. *M. murchisoni*; AMI (8) p. 140.
- Malocystisinae* defined with list of genera; DELAGE (54) p. 408.
- Mesocystis* descr.; DELAGE (54) p. 413, figg.
- Mesocystisinae* defined with list of genera; loc. cit.
- Mitrocystis* descr.; DELAGE (54) p. 407, figg.
- Palaeocystis tenuiradiatus*; AMI (8) p. 140.
- Placocystis* descr.; DELAGE (54) p. 407.
- Pleurocystis*; DELAGE (54) p. 411, figg.
- Proteroblastus*; DELAGE (54) p. 413, fig.
- Protocrinus*; DELAGE (54) p. 413, fig.
- Pseudocrinus*, diagnosis (p. 226), *P. abnormalis* n. sp., Manlius formation, Keyser, W. Va., "a angustosity" (p. 231 & fig., pl. xxxv), *P. clarki*,

- descr. (p. 233, pls. xxxvi, xxxix), *P. claypolei* n. sp., Manlius formation, Clark's Mills, New Bloomfield, Pa. (p. 232, pl. xxxvii), *P. elongatus* n. sp., Manlius formation, Martin's Mt., Bedford co., Pa. (p. 235 & fig., pl. xxxv), *P. gordonii*, descr. (p. 229 & fig., pls. xxxvi, xxxix), *P. perdewi*, descr., growth-stages (p. 236 & fig., pls. xxxvi, xxxix), *P. stellatus*, descr. (p. 232, pls. xxxv, xxxix), *P. subquadratus* n. sp., Manlius formation, near Cumberland, Md. (p. 234, pl. xxxv); SCHUCHERT (249).
- Rhombiferida* Order defined (p. 405) descr. with Famm. *Echinosphaerites*-, *Macrocyttell*-, *Glyptocystis*-, *Caryocrinus*-, *Cryptocrinus*-inae (p. 408); DELAGE (54).
- Sphaerocystis*, diagnosis (p. 248), *S. bloomfieldensis* n. sp., Manlius formation, New Bloomfield, Pa. (p. 251), *S. globularis* descr. with n. var. *ovalis* (p. 252 & fig., pl. xxxviii), *S. multifasciatus* descr. (p. 250 & figg., pls. xxxviii, xxxix); SCHUCHERT (249).
- Sphaeronis* descr.; DELAGE (54) p. 412, figg. *S. pomum*; HOLM (126) p. 47, figg.
- Sphaeronitesinae* defined with list of genera; DELAGE (54) p. 412.
- Staurocystinae*, vide *Trimerocystis*.
- Staurocystis*, distinguished from *Pseudocr.* & *Lepadocr.*; SCHUCHERT (249) p. 240.
- Steganoblastus*; DELAGE (54) p. 416, fig.
- Stribalocystis*? *elongatus*, "almost certainly not *Stribalocystis*," *S. missouriensis*, descr.; ROWLEY (236) p. 273, pl. xvi.
- Stromatocystis*; DELAGE (54) p. 415, fig.
- Tetracystis* n. g. of *Apiocystinae* (p. 217) with genotype *T. chrysalis* n. sp., Manlius formation, Keyser, W. Va. (p. 218 & fig., pl. xxxiv, xl), *T. fenestratus* (Troost sub *Echinoencr.*) now first published & figd. (p. 219 & fig., pl. xxxiv); SCHUCHERT (249).
- Trimerocystis* n. g. of *Staurocystinae* (p. 237), with genotype *T. peculiaris* n. sp. (p. 239 & fig., pl. xxxv), Manlius formation, Keyser, W. Va.; SCHUCHERT (249).

(H.) +BLASTOIDEA.

- Blastoidia* classified A. *Regulares* with Famm. *Codaster*-, *Pentremites*-, *Troostocrinus*-, *Granatoblastus*-inae, *B. Irregulares*; DELAGE (54) p. 400.
- Castigation of HAMBACH (126) Zool. Rec. 1903; ROWLEY in GREENE (105) p. 192-197.
- Acentrotremites*; DELAGE (54) p. 401, fig.
- Codaster* descr.; op. cit. p. 400, figg. *C. cf. canadensis*; GRABAU (102A) p. 194. *C. pyramidatus*; CLARKE & LUTHER (40) p. 43.
- Codasterinae* defined with list of genera; DELAGE (54) p. 400.
- Cryptoschisma*; DELAGE (54) p. 400, fig.
- Eleutheroocrinus* descr.; DELAGE (54) p. 402, figg. *E. whitfieldi*; CLARKE & LUTHER (40) p. 52.
- Granatoblastusinae* defined with list of genera [the generic name *Granatoblastus* being rejected, this Fam. name cannot possibly stand]; DELAGE (54) p. 401.
- Granatocrinus* sp.; WEYSSE (284) p. 89, fig.
- Metablastus*, vide *Tricoelocrinus*.
- Nucleocrinus* descr.; DELAGE (54) p. 401, figg. *N. angularis*, abnormal (p. 190, pl. lvii), *N. imitator* (p. 191, pl. lvii); ROWLEY in GREENE (105). *N. lucina*; op. cit. p. 192, pl. lvii: CLARKE & LUTHER (40) p. 46, 49, 52, 55.

† All extinct.

- Orbitremites* ; DELAGE (54) p. 401, fig.
Orophocrinus ; DELAGE (54) p. 400, fig.
Pentremites ; loc. cit. figg. *P. koninckanus* ; UDDEN (272) p. 380, 390 : abnormal ; ROWLEY in GREENE (105) p. 190, pl. lvii. *P. leda* ; CLARKE & LUTHER (40) p. 52 : dwarf ; LOOMIS (161) p. 907, pl. i.
Pentremitesinae defined ; DELAGE (54) p. 400.
Phaenoschisma ; DELAGE (54) p. 400, figg.
Tricoelocrinus bipyramidalis, incl. *T. wortheni*, and not to be distinguished as *Metablastus* (p. 189, pl. lvii), *T. meeki* is young of *T. woodmani*, *T. obliquatus* is syn. of *T. woodmani*, *T. varsouviensis* is young of another sp. (p. 189), *T. woodmani*? (p. 189, pl. lvii) ; ROWLEY in GREENE (105).
Troostocrinus descr. ; DELAGE (54) p. 400, fig. *T.?* *dubius* descr. ; ROWLEY (236) p. 274, pl. xvi. *T. nitidulus* is young of a *Tricoelocrinus* ; ROWLEY in GREENE (105) p. 189.
Troostocrinusinae defined with list of genera ; DELAGE (54) p. 400.
Zygocrinus ; DELAGE (54) p. 402, fig.

(K.) INCERTAE SEDIS.

- List of doubtful or imaginary forms ; DELAGE (54) p. 416.
† *Paropsonema cryptophya* ; CLARKE & LUTHER (40) p. 63.

XV. VERMES.

BY

ALICE L. EMBLETON, B.Sc., F.L.S.

CONTENTS.

	Page		Page
INTRODUCTION	2	Cestoda	45
I. TITLES	4	General Biology	45
II. SUBJECT-INDEX.		Distribution	45
VERMES (general subject)	28	Systematic	45
ANNELIDA		Trematoda	47
Gephyrea	28	General Biology	48
General Biology	28	Distribution	48
Distribution	28	Systematic	48
Systematic	29	NEMATHELMINTHES	
Polychæta (incl. <i>Archian-</i> <i>nelida</i> & <i>Myzostomida</i>)	29	Nematoda (incl. <i>Gordiacea</i>)	50
General Biology	30	General Biology	50
Distribution	30	Distribution	51
Systematic	31	Systematic	51
Oligochaeta	36	Acanthocephala	54
General Biology	37	General Biology	54
Distribution	37	Distribution	54
Systematic	37	Systematic	55
Hirudinea	39	Chaetognatha	55
General Biology	39	General Biology	55
Distribution	40	Distribution	55
Systematic	40	Systematic	55
PLATYHELMINTHES		ROTIFERA	55
Nemertina	41	General Biology	55
General Biology	41	Distribution	55
Distribution	41	Systematic	56
Systematic	41	GASTROTRICHA	56
Turbellaria	41	MESOOZA	57
General Biology	41	HEMICHORDA (incl. <i>Phoronis</i>)	57
Distribution	42	General Biology	57
Systematic	42	Distribution	57
		Systematic	57

INTRODUCTION.

THE total number of titles for the year 1904 is about 480. Some of them were not published technically during that year, several foreign publications, though of an earlier date, having only reached this country in 1904. Some of the works here recorded have only an incidental interest for workers in *Vermes*; but many of the papers are important, and mark a genuine advance in the literature of the subject. A monograph on *Oligochaeta* by DITLEVSEN (126) is worthy of mention, and also one by EHLERS (130) on the Annelids of New Zealand, while FATVEL (137) reports on the *Polychaeta* from Senegal. LUTHER'S (284) monograph on the *Eumesostomidae* contains much interesting work, and BURGER (61) in his monograph of *Nemertina* gives a very useful classification.

Faunistic studies are numerous and valuable this year. One of the most important contributions is by IKEDA (207) who describes the *Gephyrea* of Japan, many of which are new to science. COGNETTI (92-99) has several papers on *Lumbricidae* from various parts of the world, including many new species. The collections at the Museums of St Petersburg and of Colombo have been described by LINSTOW (267, 268, 260-266) who has written other papers on Helminthology this year. A faunal study of the marine *Turbellaria* from European coasts is published by GRAFF (170), while JOHNSON (220) writes on the fresh-water Nereids from the Pacific coast and Hawaii. Several additions to the Turbellarian Fauna of Russia (Kharkow and Poltava) have been made by MARKOW (293). The third part of SOULIER'S (426) revision of the Annelids from the region of Cete has appeared. MELL (303, 304) discusses the land Planarians from North East Africa and Madagascar, while MICHAELSEN (307) deals with the *Oligochaeta* of Ceylon. Passing to the Bermudas, we find important additions made by VERRILL (459-461) to the literature of Turbellarians, *Nemertinae* and Annelids, with revisions of some New England genera and species. From MOORE (313, 314) we have several faunistic papers on *Polychaeta* from North America, and HÉRUBEL (194, 195) gives accounts of *Priapulidae*, especially those from the west coast of Scandinavia. GIARD'S (159-162) papers are on *Gastrotricha* from Pas-de-Calais, and BRETSCHER'S (51, 52) are on the *Enchytraeidae* of Switzerland. It is of interest to add that MRÁZEK (325) records a new polypharyngeal Planarian from Montenegro.

Many important observations have been made this year in anatomy and histology, some of them dealing with matters of wider, biological significance. GOLDSCHMIDT'S (167) paper on the histology and cytology of *Nematoda* may be mentioned under this head, and HEIN'S (189) useful addition to histology in his description of the epithelium of *Trematoda*. Two papers by FUHRMANN (150, 151) deal with the anatomy of Trematodes, and RITTER & DAVIS (375) have studied the geology, morphology, and the immature forms of some *Enteropneusta* from western North America. SPENGEL (428-433) has again given us much valuable work on the *Enteropneusta* and BERGENDAL (24) has finished his third contribution on the anatomy and histology of *Carinoma oudemans*, with some systematic notes on *Nemertina* in general. The *Paramphistomidae* form the subject of two memoirs by FISCHÖDER (141, 142), and ASHWORTH'S (14) account of the lugworm is certainly worthy of mention. OSBORN'S (341) observations are on the habits and structure of *Cotylaspis insignis*, from Lake Chautauqua. LIVANOW (270) has investigated the morphology of *Hirudinica* and LÜHE (282, 283) describes many species of *Echinorhynchus*. Five papers by CAMERANO (64-68) go to swell the literature of *Oligochaeta*, and a new genus has been added to *Hemichorda* by CAULLERY

& MESNIL (76). As regards the structure of special organs BRASIL (44) writes on the digestive apparatus of *Polygordius*, and SPIESS (434, 435) on that of *Aulostoma gula* and *Hæmopsis sanguisuga*, while JORDAN (222) gives an account of the same organs, from rather a physiological standpoint, in *Aphrodite aculeata*. Important observations have been made by ROSSETER (382) on the genital organs of *Tenia sinuosa* and JAGERSKIÖLD (214) on those of a Distomum. GUNGL (176) carefully describes the blood vessels in the *Lumbricidæ*, while ARNESEN (13) writes a somewhat similar paper on those in the *Rhynchobdellidæ*. SCHEPOTIEFF (398) has worked at the structure of the "pockets" of setæ in some *Polychaeta* and also (399) on the organization of *Rhabdopleura*. SCHNEIDER'S (402) notes on the sense organs of *Eunice viridis* are interesting, and, as usual, the so-called "body-cavity urns" in *Sipunculus* receive a good deal of attention; see KUNSTLER & GRUDEL (238), LADREY (239, 240). A phylogenetic discussion of considerable importance comes from HUBRECHT (203, 204) in which he deals with the relationships of Annelids and Chordates, of Platyhelminths and Ctenophores. Some suggestive ideas are put forward on the subject of asymmetry in certain lower organisms, and its biological significance, by JENNINGS (219) who draws many of his observations from Rotifers.

Physiology is represented by very few memoirs, but it is to be noted that BOHN (30-34) is still working at movement in Annelids. ISSEL (208) refers to Rotifers being found endoparasitic in *Euchytraeidæ*, and DÉVÉ (121-123) records the occurrence of *Echinococcus* in rather unusual circumstances. The origin of pearls is a rather attractive subject, and there are papers on it this year by HERDMAN (193), GIARD (157) and BOUTAN (38).

One of the most valuable papers this year is by NELSON (329) on the early development of *Dinophilus*. There are many additions to Embryological literature. WOLTERECK (473) describes the development of *Polygordius* and VAN BENEDEN (456) that of *Phoronis*. MATTIESEN'S (299) work has been on the embryology of fresh-water Dendrocoelæ, and MONTGOMERY (310) writes on the structure and development of the larva of *Paragordius*. KATHARINER'S (226) attention has been given to the development of *Gyrodactylus elegans*, and LONGCHAMPS (274) describes the post-embryonal development of *Phoronis*, with notes on its affinities. TORREY'S (447) is an exhaustive treatise on the embryology of *Thalassema* and GEROULD (155, 156) has two papers on the development of *Sipunculus*. Experimentalists will be interested in BULLOT'S (58, 59) work on artificial parthenogenesis and regular segmentation in *Ophelia*, and also in YATSU'S (479) work on the development of egg-fragments in *Cerebratulus*. The spermatogenesis of *Ascaris megalocephala* has been followed in detail by TRETJAKOFF (449, 450).

Again this year there are numerous papers on regeneration and regulation. See CHILD (84), SCHULTZ (408, 409), ZELENY (480), MORGAN (319-323), NUSBAUM (337, 338), HARPER (186), ORLANDI (340). MORGAN writes also on organic polarity and axial heteromorphosis (322).

A good deal of attention is being paid to Filarial disease, see BRUMPT (55-57), BOYCOTT (42), WELLMANN (467). As regards ankylostomiasis in the Cornish miners, see HALDANE (180-182); and for sleeping sickness CLARKE (85-89).

I. TITLES*.

1. [ANON.] Marine Biological Association. Plymouth marine invertebrate fauna, being notes of the local distribution of species occurring in the neighbourhood. Compiled from the records of the laboratory of the Marine Biological Association. J. Mar. Biol. Ass. vii, 2, pp. 155-298, 1 chart. [*Vermes*, pp. 211-233.]
2. [ANON.] Stem eelworm (*Tylenchus devastatrix*). J. Board Agric. London xi, 4, p. 219.
Destroying oats in Scotland. Remedies.
3. [ANON.] Husk or hoose in calves. Op. cit. xi, 10, p. 618. (*Strongylus micrurus*.)
4. [ANON.] Peregrine Earthworms at Peradeniya. Spolia Zeylan. i, 4, pp. 113, 114.
Editorial notes. Review of Dr Michaelsen's report on the *Oligochaeta* of Ceylon.—Cf. MICHAELSEN (307).
5. [ANON.] Classification. Natural. Canad. xxxi, pp. 210-218. [*Vermes*, pp. 210-214, 6 figg.]
6. ALESSANDRINI, G. Brevi osservazioni sullo sviluppo e ciclo evolutivo dell' *Anchylostoma (Uncinaria) duodenale* (Dub.). Boll. Soc. zool. Ital. (3) v, pp. 147-166, 3 figg.
7. ALLEN, E. J. The anatomy of *Pæcilocheetus* Claparède. Quart. J. Micr. Sci. xlviii, 1904, pp. 79-151, pls. vii-xii.
8. —. *Pallasia murata* n. sp.; a new British Sabellarian. J. Mar. Biol. Ass. vii, 2, pp. 299-304, pl. x.
9. *ALZONA, C. Sulla fauna delle caverne del Bolognese. Rendic. iv. Con. Unione Zool. Ital. Monit. Zool. ital. xiv, No. 12, pp. 328-330.
10. ANNANDALE, N. The *Gordiidae* in folk-lore. Nature lxix, p. 393.
11. APÁTHY, ST. V. Die drei verschiedenen Formen von Lichtzellen bei Hirudineen. Verh. Congr. Zool. 1902, pp. 707-728. [Cf. Zool. Rec. 1902, VERMES (6).]
Review by Dr SÁNDOR GORKA, Allatt. Kozl. Magyar Tars. 1904, iii, 1, pp. 76-82, 6 figg.
12. ARKHANDHLSKII, A. D. Paleotzenovliza otlozheniya Saratovskagho Povolzhya, i ikhzh fauna. Mater. gheol. Rossii xxii, 1, p. 61.
13. ARNESEN, EMILY. Ueber den feineren Bau der Blutgefässe der Rhynchobdelliden mit besonderer Berücksichtigung des Rückengefässes und der Klappen. Jena. Zeitschr. xxxviii, 4, pp. 771-806, pls. xxvi-xxviii.
14. ASHWORTH, J. H. Memoir on *Arenicola*. The lugworm. P. Liverp. biol. Soc. xviii, pp. 209-326, 7 pls.
15. AUDEN, F. T. *Bilharzia haematobia*. Lancet 1904, i, p. 1235.
16. AZOULAY, L. Les neurofibrilles dans les cellules nerveuses situées autour du tube digestif de la sangsue. C.R. Soc. Biol. lvi, pp. 465-468, 2 figg.
17. BANCROFT, T. L. Some further observations on the life-history of *Filaria immitis* Leidy. Brit. Med. J. 1904, i, pp. 822 & 823, 2 figg.
18. BARBAGALLO, P. & DRAGO, U. Primo contributo allo studio della fauna elmintologica dei pesci della Sicilia orientale. Atti Acc. Gioen. lxxxix, 4, vol. xvii, No. 3, 32 pp. [Cf. Zool. Rec. 1903, VERMES (16).]

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

- BARRETT, J. T. [See SMITH & BARRETT (422).]
19. BASTIAN, H. C. The mode of infection by Nematoids. *Lancet* 1904, i, p. 833.
 20. —. Note on the probable mode of infection by the so-called *Filaria perstans*, and on the probability that this organism really belongs to the genus *Tylenchus* (Bastian). *T. c.* pp. 286 & 287, 1 fig.
 21. —. The anatomical characters of the so-called *Filaria perstans* and on the mode of infection thereby. *T. c.* pp. 643–645.
 22. BEAUCHAMP, P. DE. Sur un nouveau Rotifère des environs de Paris et sur le genre *Drilophaga* Vejdovsky. *Bull. Soc. zool. France* xxix, 7, pp. 157–160, 3 figg.
 23. BEEDE, J. W. & ROGERS, A. J. Coal measure faunal studies. III. Lower coal measures. *Kansas Univ. Bull.* ii, 15, pp. 459–473.
 24. BERGENDAL, D. Studien über Nemertinen. III. Beobachtungen über den Bau von *Carinoma oudemans* nebst Beiträgen zur Systematik der Nemertinen. *Acta Univ. Lund.* xxxix, 86 pp., 2 pls., 25 text-figg.
 25. BILLET, A. Culture d'un Trypanosome de la grenouille chez une Hirudinée ; relation ontogénique possible de ce Trypanosome avec une Hémogrégarine. *C.R. Ac. Sci.* cxxxix, 2, pp. 574–576.
 26. BILLINGHURST, W. B. The chief forms of *Entozoa* which affect man. *Tr. W. Kent Nat. Hist. Soc.* 1903–1904, pp. 32 & 33.
 27. BLANCHARD, R. *Tanqua* n. g. remplaçant *Ctenocephalus* von Linstow. *Arch. parasit.* viii, p. 478.
 28. —. Sur un travail de M. le Dr J. Guiart intitulé : Rôle du Trichocéphale dans l'étiologie de la fièvre typhoïde. *Op. cit.* ix, pp. 122–128.
 29. —. Candiru et Bilharzie. *Op. cit.* viii, p. 153, 1 fig.
 30. BOHN, G. Mouvements de manège en rapport avec les mouvements de la marée. *C.R. Soc. Biol.* lvii, pp. 297 & 298, 3 figg.
 31. —. Les *Convoluta roscoffensis* et la théorie des causes actuelles. *Bull. Mus. Paris* 1903, pp. 352–364, 4 figg.
 32. —. À propos d'un mémoire récent sur les *Convoluta*. *T. c.* pp. 397–399.
 33. —. Sur les mouvements respiratoires musculaires des Annélides marins. *C.R. Soc. Biol.* lvi, pp. 185 & 186.
 34. —. Les mouvements hélicoïdaux des Annélides. *C.R. Soc. Biol.* lvi, pp. 241–243.
 35. BOLTON, H. The palæontology of the Lancashire coal measures. *Tr. Manchester Geol. Soc.* xxviii, i, pp. 378–420 ; ii, pp. 578–650 ; iii, pp. 668–689.
 36. BONARELLI, G. Appunti sulla costituzione geologica dell' isola di Creta. *Atti Acc. Lincei* (5) iii, pp. 518–548, 1 pl., 4 figg. [*Vermes*, p. 536.]
 - BONNET, A. [See CONTE & BONNET (103).]
 37. BORTOLOTTI, C. Determinazione di alcuni lombricidi raccolti nei dintorni di Bologna con un cenno sulla classificazione degli Oligocheti terricoli. *Boll. Naturalista* xxiv, pp. 16–18.
 38. BOUTAN, L. Les perles fines leur origine réelle. *Arch. Zool. exp. Hist. Nat.* (4) ii, xxxii, pp. 47–90, pl. iii.

39. BOVARD, JOHN F. The distribution of the sense organs in *Microcolex elegans*. Univ. Calif. publ. Zool. i, pp. 269-286, pls. xxiv & xxv.
40. *BOVERI, T. Ergebnisse über die Konstitution der chromatischen Substanz des Zellkerns. Jena, 1904, 130 pp., 75 figg.
Review by FRICK, Zool. Zentrbl. xi, pp. 97-99.
41. —. Protoplasmadifferenzierung als auslösender Faktor für Kernverschiedenheit. SB. Ges. Würzburg 1904, pp. 1-5.
42. BOYCOTT, A. E. The diagnosis of *Ankylostoma* infection. Rep. Sec. Home Dep. 1904, 12 pp.
43. BRANNER, J. C. The stone reefs of Brazil, their geological and geographical relations, with a chapter on the coral reefs. Bull. Mus. Harvard xlv, 285 pp., 97 pls. [Mentions some worms.]
44. *BRASIL, L. Contribution à la connaissance de l'appareil digestif des Annélides Polychètes. L'épithélium intestinal de la Pectinaire. (Thèse.) Paris, 1904, 8vo.
Review by A. PRENANT, Rev. gen. Sci. xvi, pp. 286 & 287. The work is probably the same as the next.
45. —. Contribution à la connaissance de l'appareil digestif des Annélides polychètes; l'épithélium intestinal de la pectinaire. Arch. Zool. exp. (4) ii, xxxii, pp. 91-255.
46. —. Sur une Coccidie nouvelle, parasite d'un Cirratulien. C.R. Ac. Sci. cxxxix, pp. 645 & 646.
47. BRAULT, A. & LOEPER, M. Le Glycogène dans le développement de certains Parasites (Cestodes et Nématodes). J. Physiol. Path. vi, pp. 503-512, pl. iv.
48. BRAUN, M. [Review of Looss' paper in Zool. Jahrb. Syst. xvi, 1902. "Ueber neue und bekannte Trematoden aus Seeschildkröten; nebst Erörterungen zur Systematik und Nomenclatur."] Zool. Zentrbl. xi, pp. 25-32.
49. BREHM, V. & ZEDERBAUER, E. Beiträge zur Planktonuntersuchung alpiner Seen. Verh. Ges. Wien 1904, pp. 48-58. [*Rotifera*.]
Review by ZSCHOKKE, Zool. Zentrbl. xi, pp. 168 & 169.
50. BRESSLAU, E. Beiträge zur Entwicklungsgeschichte der Turbellarien. I. Die Entwicklung der Rhabdocölen und Alloiocölen. Zeitschr. wiss. Zool. lxxvi, pp. 213-332, pls. xiv-xx.
Review, Zool. Zentrbl. xi, pp. 354-367.
51. BRETSCHER, K. Beobachtungen über die Oligochaeten der Schweiz. VIII. Folge. Rev. Suisse Zool. xii, pp. 259-267.
52. —. Die xerophilen Enchytraeiden der Schweiz. Biol. Centrbl. xxiv, pp. 501-513.
53. BRIOT, A. Nouvelle espèce de Trématode, *Microcotyle draconis* n. sp. C.R. Soc. Biol. lvi, p. 126.
54. BROWNE, E. T. & VALLENTIN, R. On the marine fauna of the Isles of Scilly.
I. The pelagic fauna. E. T. Browne, pp. 120-128.
II. The shore fauna. R. Vallentin, pp. 128-132.
J. Inst. Cornwall xvi, 1.
55. BRUMPT, E. Contribution à l'étude de l'évolution des Hémogregarines et les Trypanosomes. (Note préliminaire.) C.R. Soc. Biol. lvii, pp. 165-167.
56. —. Les filarises humaines en Afrique. Op. cit. lvi, pp. 758-760.
57. —. La *Filaria loa* Guyot, est la forme adulte de la Microfilarie désignée sous le nom de *Filaria diurna* Manson. T. c. pp. 630-632.

58. BULLOT, G. Artificial parthenogenesis and regular segmentation in an Annelid (*Ophelia*). Arch. Entwickmech. xviii, pp. 161-170, 13 figg.
59. ———. Artificial parthenogenesis and regular segmentation in an Annelid (*Ophelia*). Univ. Calif. Publ. Physiol. i, 19, pp. 165-174, 8 figg. [Reprint of preceding.]
60. BURCKHARDT, R. Das erste Buch der aristotelischen Tiergeschichte. Zool. Ann. i, 1, pp. 1-28.
61. BURGER, O. *Nemertini*. Tierreich. xx, 1904, 151 pp., 15 figg.
BUSCH, KATHARINE. [See MOORE & BUSCH (315).]
62. DU BUYSSON, H. *Cittotœnia denticulata* Rud. Rev. Sci. Bourbonnais xvii, p. 130.
63. CAJAL, S. RAMÓN Y. Sobre la existencia de un aparato tubuliforme en el protoplasma de las células nerviosas y epiteliales de la lombriz de tierra. Bol. Soc. espan. iii, pp. 395-398, 2 figg.
64. CAMERANO, L. Nuove specie di *Chordodes* del Guatemala. Ann. Mus. Genova (3) i, pp. 93 & 94.
65. ———. Ricerche intorno all variazione del *Phyllodactylus europæus* Gené. Boll. Mus. Torino xix, No. 471, 28 pp.
66. ———. Della indentità specifica del *Parachordodes wolterstorffii* e del *Parachordodes pleskei*. T. c. No. 470, 4 pp.
67. ———. Osservazioni intorno al *Chordodes skoricovi* Camer. T. c. No. 469, 3 pp.
68. ———. Nuova specie di Gordio dell' Alta Birmania. T. c. No. 468.
69. *CARAGEAN & MAROTEL. Une nouvelle Filaire parasite du sang. Rev. gen. Med. vet. 1903, viii, pp. 447-454.
Review by LINSTOW, Zool. Zentrbl. xi, p. 32.
70. CARAZZI, D. Ricerche embriologiche e citologiche sull' uovo di *Myzostoma glabrum* Leuckart. Monit. Zool. ital. xv, No. 2, pp. 62-78, pl. iv, No. 3, pp. 87-100.
71. CARL, —. Der tierischen Parasiten der Schlachttiere des Karlsruher Schlachthauses. Mt. Bad. Zool. Ver. xvii, pp. 111-120.
72. *CASELLA, A. Eustrongilo gigante (*Strongylus gigas*) trovato nel rene d' un cane: nota clinica ed anatomopatologica. Parma. Zerbini 1903, 7 pp.
Title in Monit. Zool. ital. xv, p. 210.
73. CASTELLANI, A. & WILLEY, A. Observations on the Hæmatozoa of Vertebrates in Ceylon. Spolia Zeylan. ii, 6, pp. 78-93, 1 pl.
74. CATTO, J. A new species of *Bilharzia*. Brit. Med. J. 1904, ii, pp. 1411, 1425.
75. CATTO, JOHN. A new Trematode. Brit. Med. J. 1904, ii, p. 663. [Species unknown.]
76. CAULLERY, M. & MESNIL, F. Contribution à l'étude des Entero-pneustes, *Protobalanus* n. g. *koehleri* Caull. & Mesn. Zool. Jahrb. Anat. xx, pp. 227-256, pls. xii & xiii.
77. ——— & ———. Sur les affinités des Actinomyxidies. C.R. Soc. Biol. lvi, pp. 411-413.
78. ——— & ———. Sur un type nouveau (*Sphæractinomyxon stolci* n. g., n. sp.) d'Actinomyxidies et son développement. T. c. pp. 408-410.

79. [CAULLERY, M. & MESNIL, F.] Sur un organisme nouveau (*Pelmatosphaera polycirri* n. g., n. sp.) parasite d'une Annélide (*Polycirrus hæmatodes* Clap.) et voisin des Orthonectides. T. c. pp. 92-95, 4 figg.
80. — & —. Sur un organisme nouveau (*Pelmatosphaera polycirri*, n. g., n. sp.) parasite d'une Annélide (*Polycirrus hæmatodes* Clap.) et voisin des Orthonectides. C.R. Ac. Sci. cxxxviii, pp. 217-219.
81. CHALMERS, A. J. *Ascaris lumbricoides* in the liver and pancreas of man. [Ceylon.] Spolia Zeylan. ii, 5, pp. 47-49, 2 figg.
82. *CHANCEY, I. The plankton of Winona Lake. P. Indiana Ac. 1902, pp. 120-133. [*Rotifera*.]
Review by ZSCHOKKE, Zool. Zentrbl. xi, p. 169.
83. CHILD, C. M. Amitosis in *Moniezia*. Anat. Anz. xxv, pp. 545-558, 11 figg.
84. —. Form-regulation in *Calentera* and *Turbellaria*. Smithson. Collect. xlv, pp. 134-143.
85. CLARKE, J. H. Sleeping sickness. Homeopathic World xxxviii, pp. 73-76.
86. —. *Sanguisuga*—the leech as a sight restorer. T. c. p. 286.
87. —. *Ascaris lumbricoides*. T. c. pp. 475 & 476.
88. —. Infection by Nematodes. T. c. pp. 476 & 477.
89. —. Sleeping sickness—prolonged incubation. T. c. p. 535.
90. CLARKE, J. M. Limestones of Central and Western New York interbedded with bituminous shales of the Marcellus stage, with notes on the nature and origin of their faunas. Rep. N. York Mus. lv, pp. 115-138. [Lists of fossils, p. 133.]
CLUTTON, H. H. [See CULLINGWORTH & CLUTTON (107).]
92. COGNETTI, L. Descrizione di un nuovo Lombrico Cavernicolo. Boll. Mus. Torino xix, No. 466, 4 pp.
93. —. Oligocheti di Costa Rica. T. c. No. 462, pp. 1-10, 1 pl.
94. —. Res Italicae. xi. Nota sui alcuni *Lombricidi* di caverne italiane. T. c. No. 459, pp. 1-4.
95. —. Lombricidi dei Pirenei. T. c. No. 476, 14 pp.
96. —. xxvi. Oligocheti dell' Ecuador. T. c. No. 474, 18 pp.
97. —. Nuovi Oligocheti di Costa Rica. T. c. No. 478, 4 pp.
98. —. Diagnosi di un nuovo lombrico del Chile. T. c. No. 481, 2 pp.
99. —. Contributo alla conoscenza degli Oligocheti cavernicoli. Atti Soc. Modena (4) v, 36, pp. 3-10. [2 n. spp.]
100. COHN, L. Zur Anatomie der *Amphiline foliaceae* (Rud.). Zeitschr. wiss. Zool. lxxvi, pp. 367-387, pl. xxiii.
101. —. Helminthologische Mitteilungen II. Arch. Naturg. 1904, i, pp. 229-252, pl. xi.
102. COLLIN, A. Bericht über die Rotatorien- und Gastrotrichen-Literatur im Jahre 1896. Arch. Naturg. 1897, ii, 3 [published in 1904], pp. 221-239.
103. CONTE, A. & BONNET, A. Sur un Nématode nouveau, *Angiostoma heliciis* n. sp. parasite de l'appareil génital d'*Helix aspersa* (Müll.). Ann. Soc. Linn. Lyon l, pp. 63-68, 11 text-figg. [See Zool. Rec. xl, (96).]

104. CONYNGHAM, H. F. A new Trematode of man (*Amphistomum watsoni*). Lancet 1904, ii, p. 464. Brit. Med. J. 1904, ii, p. 663.
105. COSENTINO, A. Sulla Tossicità degli Ascaridi. Lo Speriment. lviii, pp. 530-534.
106. COUFFON, O. Étude critique sur les faluns du Haguineau. Bull. Soc. Angers xxxiii, pp. 35-85.
107. CULLINGWORTH, C. J. & CLUTTON, H. H. Hydatids in various parts of the abdomen. Lancet 1904, i, p. 1657.
108. CURTIS, W. C. Demonstrations of preparations made during a study of the life-history of the Cestode *Crossobothrium laciniatum* (Linton). Science xix, p. 218. [Title only given.]
109. DADAY, E. v. Mikroskopische süßwasserthiere aus Turkestan. Zool. Jahrb. Syst. xxi, pp. 469-554, pls. xxvii-xxx, 5 figg.
110. DAINELLI, G. La fauna eocenica di Bribir in Dalmazia. Pal. Ital. x, 1904, pp. 141-173, pls. xv-xvii.
111. —. Contributo allo studio dell' Eocene medio dei dintorni di Ostrovoza in Dalmazia. Atti Acc. Lincei (5) xiii, No. 5, pp. 227-282.
DAINTREE, R. [See GREGORY & DAINTREE (173).]
112. DALEAU, —. Quelques spécimens de Linguatules parasites des sinus du Chien. Pr.-verb. Soc. Linn. Bordeaux lix, p. lxvii.
DAVIS, B. M. [See RITTER & DAVIS (375).]
113. DELGADA, J. F. N. Note sur *Scolithus dufrenoyi* Rouault. Comm. geol. Portugal v, 1903, pp. 251-253.
114. DENNANT, J. Catalogues of the described species of fossils (except *Bryozoa* and *Foraminifera*) in the Cainozoic fauna of Victoria, S. Australia and Tasmania. Rec. Geol. Surv. Victoria i, 2, pp. 89-147.
115. DESTINEZ, P. Quelques fossiles de Pair (Clavier), 1897. Ann. Soc. geol. Belgique xxiv, pp. xxxviii & xxxix.
116. —. Troisième note sur les fossiles du marbre noir de Pair, 1898. Op. cit. xxv, pp. xxxiv-xxxvi.
117. —. Quatrième note sur les fossiles du calcaire de Pair, 1899. Op. cit. xxvi, pp. lviii & lix.
118. —. Fossiles viséens de Seille et de Comblain-au-Pont. T. c. pp. cix-cxiii.
119. —. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. Op. cit. xxxi, 1, pp. 143-151.
120. —. Faune et flore des psammites du Condroz (Famennien). T. c. 3 [*Vermes*], p. 256.
121. DÉVÉ, F. Ensemencement intra-trachéal de sable Echinococcique. Echinococcique secondaire du poumon, d'origine bronchique. C.R. Soc. Biol. lvii, pp. 136-138.
122. —. Le chat domestique, hôte éventuel du *Tenia* échinocoque. T. c. pp. 262-264.
123. —. Prophylaxie de l'échinococcose. T. c. pp. 261 & 262.
124. DEWALQUE, G. Les fossiles du Bolderberg et les fossiles boldériens. Ann. Soc. geol. Belgique xxv, pp. 117-122, 1899.

125. DIENER, C. Himalayan Fossils. i. 5. Permian fossils of the Central Himalayas. Pal. Ind. xv, 204 pp., pls. i-x.
126. DITLEVSEN, A. Studien an Oligochäter. Zeitschr. wiss. Zool. lxxvii, pp. 398-480, pls. xvi-xviii.
DRAGO, U. [See BARBAGALLO & DRAGO (18).]
127. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf (Westerwald). Paläontogr. 1, 6, pp. 229-282.
128. DYÉ, L. Les parasites des Culicides. Arch. parasit. ix, pp. 5-77. Platyhelminthes, p. 45, Nematodes, pp. 46-57, 4 figg.
129. EDEN, T. W. Primary Hydatid disease (*Echinococcus*) of the Fallopian tube. Lancet 1904, i, p. 1657.
130. EHLERS, E. Neuseeländische Anneliden. Abh. Ges. Gotting. iii, 70 pp., 9 pls., 16 n. spp.
131. ENTZ, G. Az édesviziek élete. Termes. Kozl. Magyar Tars. 1904, pp. 616-636, 9 text-figg.
132. —. Die Fauna der kontinentalen Kochsalzwässer [aus "Pötfüzetek a Természettudományi Közlönyhöz" (Ergänzungshefte zu den Naturwiss. Mt.) Budapest 1900. Heft. iv, pp. 99-119]. Math. naturw. Ber. Ungarn xix, pp. 89-124.
Lists of *Turbel.*, *Nemat.*, *Olig.*, *Rotifera*, p. 114.
133. ETHERIDGE, R. Determinations of palæozoic and mesozoic fossils. Rec. Geol. Survey Victoria i, 1, pp. 10-12.
134. FAGE, L. Sur les fonctions ergastoplasmiques des cellules néphridiales de sangsue (*Hirudo medicinalis*). C.R. Ac. Sci. cxxxviii, pp. 1450-1452.
135. FALKNER, C. & LUDWIG, A. Beiträge zur Geologie der Umgebung St Gallens. Jahrb. St. Gall. Ges. 1901-1902, pp. 475-620.
136. *FANTINI, O. Filaria labiato-papillosa nell' intestino tenue di un bove. Clin. veter. xxvi, p. 294, Milano, 1903.
Title from Monit. Zool. ital. xv, p. 82.
137. FAUVEL, P. Annélides Polychètes de la Casamance rapportées par M. Aug. Chevalier. Bull. Soc. geol. Normand. (5) v, pp. 59-105 52 figg.
12 n. spp. Title recorded in Zool. Rec. 1902, VERMES, xxxix (124).
138. —. Les prétendus otocystes des Alciopiens (Annélides Polychètes). C.R. Ass. Franc. xxxii, pp. 784-788.
Note of discussion, p. 224.
139. —. Un nouvel Oligochète des puits (*Trichodriloides intermedius* n. g. n. sp.). T. c. pp. 754-759, 2 figg.
140. —. Un nouvel Oligochète des puits (*Trichodriloides intermedius*, n. g., n. sp.). T. c. 1, p. 221. See also p. 754.
141. FISCHÖDER, F. Weitere Mitteilungen über Paramphistomiden der Säugetiere. Centrbl. Bakter. xxxv, pp. 598-601.
142. —. Beschreibung dreier Paramphistomiden-Arten aus Säugethieren. Zool. Jahrb. Syst. xx, pp. 453-470, pls. xv & xvi, 3 figg.
143. FOERSTE, A. F. The Ordovician-Silurian contact in the Ripley Island area of Southern Indiana, with notes on the age of the Cincinnati geanticline. Amer. J. Sci. (4) xviii, pp. 321-342, 1 pl.
144. —. Silurian and Devonian Limestones of Tennessee and Kentucky. Bull. Geol. Soc. Amer. 1901, xi, pp. 395-444, 8 figg.

145. FOURTEAU, R. Contribution à l'étude de la faune Crétacique d'Égypte. Bull. Inst. Egypt. iv, 4, pp. 231-349.
146. FOWLER, —. Distribution of two Biscay Chaetognatha, *Sagitta serratodentata* and *Krohnia hamata*. Nature lxi, p. 381.
147. FOX, H. Geological notes. II. Supplementary notes on the distribution of fossils on the north coast of Cornwall, south of the Camel. Tr. geol. Soc. Cornwall xii (9), pp. 753-759.
148. FOX-STRANGWAYS, C. The geology of the Oolitic and Cretaceous rocks south of Scarborough. Mem. geol. Surv. England and Wales liv, lv, pp. 1-112, xi pls., 12 text-figg. [List of *Serpula* spp.]
149. FUHRMANN, O. Ein getrenntgeschlechtiger Cestode. Zool. Jahrb. Syst. xx, pp. 131-150.
150. —. Neue Trematoden. Centrbl. Bakter. xxxvii, pp. 58-64, 4 figg.
151. —. Die Tetrabothrien der Säugetiere. Op. cit. xxxv, pp. 744-752, 11 figg.
- FULLER, W. N. [See RAYMOND & FULLER (365).]
152. GALBRAITH, H. T. Tapeworm as a cause of chorea. Lancet 1904, i, p. 1348.
153. GARRARD, G. E. Battle royal between a water-flea and a tube Rotifer. J. Northampt. Soc. xii, pp. 19 & 20.
154. GEMMILL, J. F. *Ichthyonema grayi* (Gemmill and v. Linstow). Tr. Soc. Glasgow vi (3), pp. 299-301.
- GENDRE, E. [See PÉREZ & GENDRE (348, 349).]
155. GEROULD, J. H. A key to the development of *Sipunculus nudus*. Amer. Natural. xxxviii, pp. 493 & 494.
156. —. Studies on the embryology of the *Sipunculidæ*. I. The embryonal development and its homologue. Mark Anniv. Vol. 1903, New York, pl. 439-452, pl. xxxii.
157. GIARD, A. Les précurseurs des idées modernes sur l'origine des perles. Feuille Natural. (4), xxxiv, pp. 45-49.
158. —. L'*Echinorhynchus hæruca* Rudolphi, parasite de la Rainette. T. c. p. 108.
159. —. Sur une faunule caractéristique des sables à Diatomées d'Ambleteuse. II. Les Gastrotriches normaux. C.R. Soc. Biol. lvi, pp. 1061-1063, 3 figg.
160. —. Sur une faunule caractéristique des sables à Diatomées d'Ambleteuse. III. Les Gastrotriches aberrants. T. c. pp. 1063-1065, 2 figg.
161. —. Sur une faunule caractéristique des sables à Diatomées d'Ambleteuse (Pas-de-Calais). Microgr. prep. xii, 3, pp. 105-109, 2 figg.
162. —. Sur une faunule caractéristique des sables à diatomées d'Ambleteuse (Pas-de-Calais). C.R. Soc. Biol. lvi, pp. 295-298. [See (161).]
163. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. Mem. Mus. Belgique i, 81 pp. List of spp. p. 34.
164. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. Trav. Lab. Arcachon vii, pp. 86-161. [General discussion, chiefly on worms and *Cœlenterata*.]

165. GIRTY, G. H. The Carboniferous formations and faunas of Colorado. Prof. Papers U. S. Geol. Surv. xvi, 1903, p. 546.
166. GOLDSCHMIDT, R. Der Chromidialapparat lebhaft funktionierender Gewebezellen. Biol. Centrbl. xxiv, pp. 241-251, 4 figg.
Review, FICK, Zool. Zentrbl. xi, pp. 778 & 779.
167. ——. Der Chromidialapparat lebhaft funktionierender Gewebszellen. (Histologische Untersuchungen an Nematoden. II.) Zool. Jahrb. Anat. xxi, pp. 49-140, pls. iii-viii, 16 figg.
168. ——. Über die sogen. radiärgestreiften Ganglienzellen von *Ascaris*. Biol. Centrbl. xxiv, pp. 173-182, 2 figg.
169. GOODRICH, E. S. On the branchial vessels of *Sternaspis*. Quart. J. Micr. Sci. xlviii, pp. 1-10, pls. i & ii.
GORKA. [See SÁNDOR GORKA (394, 395).]
170. GRAFF, L. v. Marine Turbellarien Orotavas und der Kisten Europas. Zeitschr. wiss. Zool. lxxviii, 2, pp. 190-245, pls. xi-xiii.
171. GRAHAM, J. Y. A study of a parasite of the oyster (*Bucephalus cuculus* McC.). Science xix, p. 247.
172. GRAVIER, C. Sur la morphologie des Chétoptériens. C.R. Ac. Sci. cxxxix, 2, pp. 545 & 546.
173. GREGORY, A. C. & DAINTREE, R. Fossils from the Carbo-permian of Queensland and Western Australia. P. Soc. Victoria xvi, 2, pp. 313-335.
GRUVEL, A. [See KUNSTLER & GRUVEL (238).]
174. GUCCINI, L. Sul contenuto gastro-enterico dei pesci del Ticino. Rend. Ist. Lombardo xxxvii, 3, pp. 194-201.
175. GUIART, J. Programme des démonstrations pratiques de parasitologie. Arch. parasit. vii, p. 158-164.
176. GUNGL, O. Anatomie und Histologie der Lumbriciden blutgefäße. Arb. Inst. Wien xv, 2, pp. 155-183, 1 pl.
177. GUPPY, R. J. L. Suggestions as to siliceous and calcareous organisms. P. Inst. Trinidad iii, 1899, pp. 167 & 168.
178. GÜRICH, G. Das Devon von Deknik bei Krakau. Beitr. Pal. Oesterr.-Ung. xv, pp. 127-164, pls. xiv & xv.
179. HÄCKER, V. Bastardirung und Geschlechtszellenbildung. Zool. Jahrb. Suppl. vii, pp. 161-256, pls. xii & xiii.
180. HALDANE, J. S. Miners' anæmia, or ankylostomiasis. Tr. Inst. Mining Eng. 1903-1904, 6 pp., 8 figg.
181. ——. Ankylostomiasis in Westphalian Collieries. Rep. Sec. Home Dep. 1903, 13 pp.
182. —— & THOMAS, R. A. On the health of Cornish miners. Op. cit. 1904, 104 pp.
183. HALL, W. Höhere tierische Parasiten. Centrbl. Bakter. xxxv, pp. 145-156.
184. HALL, M. A. & PRITCHARD, G. B. The Geology of the Barwon about Inverleigh. P. Soc. Victoria xvi, 2, pp. 292-305.
185. HANEL, ELISE. Ein Beitrag zur "Psychologie" der Regenwürmer. Zeitschr. allg. Physiol. iv, pp. 244-258, 6 figg.

186. HARPER, E. H. Notes on regulation in *Stylaria lacustris*. Biol. Bull. vi, pp. 173-190, 16 figg.
187. HARTLAUB, C. Bericht über eine zoologische Studienreise nach Frankreich, Grossbritannien und Norwegen. Wiss. Meeresuntersuch. Helgoland v, 2, pp. 97-106, 3 figg.
188. HAYDEN, H. H. Memoirs of the Geological Survey of India. Mem. geol. Surv. India xxxvi, 1, pp. 1-129.
189. HEIN, W. Zur Epithelfrage der Trematoden. Zeitschr. wiss. Zool. lxxvii, pp. 546-585, pls. xxiii-xxv.
190. —. Beiträge zur Kenntnis von *Amphitina foliacea*. Op. cit. lxxvi, pp. 400-438, pls. xxv & xxvi.
191. HEMINGWAY, E. E. The brain and nerve cord of *Placobdella pediculata*. Science xix, p. 218.
192. HERDMAN, W. A. On a phosphorescence phenomenon in the Indian Ocean. Rep. Brit. Ass. 1903-1904, pp. 695 & 696.
193. —. Note on Pearl-formation in the Ceylon pearl oyster. T. c. p. 695.
194. HÉRUBEL, M. A. Sur quelques points de la morphologie comparée des Priapulides. Bull. Soc. zool. France xxix, 5, pp. 126-129.
195. —. Sur les Priapulides des cotes occidentales de la Scandinavie. T. c. 5, pp. 100-109, 2 figg.
196. HIND, W. On the homotaxial equivalents of the Lower Culm of North Devonshire. Geol. Mag. i, 8, pp. 397-403.
197. HINDE, G. J. On the zone of Marsupites in the Chalk at Beddington, near Croydon, Surrey. Geol. Mag. i, 10, pp. 482-487.
Lists of spp.
198. HOLM, G. Kinnekulles berggrund. Sveriges Geol. Unders. Afl. No. 172, 1901, pp. 1-118, 4 pls.
199. —. Palæontologiska notiser. Op. cit. No. 179, 104 pp., 14 pls.
200. HOLMES, W. MURTON. List of fossils collected. [Surrey.] P. Croydon Club 1903-1904, pp. 45 & 46.
201. HOLMGREN, E. Zur Kenntnis der zylindrischen Epithelzellen. Arch. mikr. Anat. lxx, 2, pp. 280-297, pls. xviii & xix, 5 figg.
202. HORST, R. Wawo and palolo worms. Nature lxxix, p. 582.
203. HUBRECHT, A. A. W. Die Abstammung der Anneliden und Chordaten und die Stellung der Ctenophoren und Plathelminthen im System. Jena. Zeitschr. xxxix, 1, pp. 151-176.
204. —. On the relationship of various invertebrate phyla. P. Ac. Amsterdam, April 23, 1904, pp. 839-846.
205. HUDLESTON, W. H. On the origin of the marine (halolimnic) fauna of Lake Tanganyika. Geol. Mag. i, 7, pp. 337-382, 2 pls.
206. HURRELL, H. E. Polyzoa. Tr. Norfolk Soc. vii, 5, p. 755. [*Rotifera*, p. 756.]
207. IKEDA, I. The Gephyrea of Japan. J. Coll. Tokyo xx, 4, 87 pp., 4 pls. [n. spp.]
208. ISSEL, R. Sui Rotiferi endoparassiti degli Enchitreidi. Arch. Zool. exp. ii, 1, pl. 1-9, pl. 1.

209. [ISSEL, R.] Due nuove *Fridericia*. Atti Soc. Ligustica xv, 1, pp. 31-39, 17 figg.
210. ISTVÁN RÁTZ. Új és kevésbé ismert hazai metélyek. Allatt. Kozl. Magyar Tars. 1903, ii, 2, pp. 83-88, pl. x.
211. —. In Ungarn gesammelte arten von *Mesocestoides*. Op. cit. 1904, iii, 2, pp. 116 & 119.
212. —. A széles galandfereg előfordulása hazánkban. Termes Kozl. Magyar Tars. 1904, pp. 22-28, 5 figg.
213. IWANOW, P. Ueber die Regeneration der Segmente bei den Polychaeten. Protok. St. Peterb. Obshch. xxxv, 1904, 4 [German résumé, pp. 307-309], pp. 254-261.
214. JÄGERSKIÖLD, L. A. *Scaphanocephalus expansus* (Crepl.) eine genitalnapftragende Distomide. Res. Swed. Zool. exp. Egypt and the White Nile 1901. i. 1904, 16 pp., 1 pl., 3 figg.
215. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. Jahrb. geol. Reichsanst. liv (1), 1904, pp. 75-90.
216. JAMMES, L. & MANDOUL, H. Sur les propriétés bactéricides des sucs helminthiques. C.R. Ac. Sci. cxxxix, 2, pp. 329-331.
217. JANICKI, C. v. Bemerkung über Cestoden ohne Genitalporus. Centrbl. Bakter. xxxvi, pp. 222 & 223, 1 fig.
218. JANOWSKY, R. Über die Polygordiuslarve des Hafens von Triest. Arb. Inst. Wien xv, 2, pp. 197-212, 2 pls.
219. JENNINGS, H. S. Asymmetry in certain lower organisms and its biological significance. Mark Anniv. Vol. 1903, New York, pp. 317-337.
220. JOHNSON, H. P. Fresh-water Nereids from the Pacific Coast and Hawaii, with remarks on fresh-water Polychæta in general. Mark Anniv. Vol. 1903, New York, pp. 205-222, pls. xvi & xvii.
221. JOHNSTON, S. J. Contributions to a knowledge of Australian *Entozoa*. III. On some species of *Holostomidae* from Australian birds. P. Linn. Soc. N. S. Wales xxix, i, pp. 108-116, pls. v-vii. [5 n. spp.]
222. JORDAN, H. Die physiologische Morphologie der Verdauungsorgane bei *Aphrodite aculeata*. Zeitschr. wiss. Zool. lxxviii, 2, pp. 165-190, pl. x.
223. JOUBIN, L. Note sur une nouvelle Némerte pélagique (*Nectonemertes grimaldii*). Bull. Mus. Monaco 1904, No. 20, 6 pp., 2 figg.
224. JUKES-BROWNE, A. J. The Cretaceous rocks of Britain. The upper chalk of England. Mem. geol. Surv. U. K. iii, 1904, 566 pp.
225. KAMENSKY, S. Notices helminthologiques. 2. Sur la présence réelle du *Dicrocoelium lanceolatum* chez le chien. Trudui Kharkov. Univ. xxxvi, pp. 59-64. [Résumé, p. 63.]
226. KARASKASCH, N. I. Note sur la faune contenue dans les galets de Bolschезemelskaïa toundra. Protok. St. Peterb. Obshch. 1904, xxxv, pp. 130-146. [French résumé, p. 162.]
227. KATHARINER, L. Ueber die Entwicklung von *Gyrodactylus elegans* v. Nrdm. Zool. Jahrb. Suppl. vii, pp. 519-550, pls. xxvi-xxviii, 10 figg.
228. KEEBLE, F. The bionomics of *Convoluta roscoffensis*, with special reference to its green cells. Rep. Brit. Ass. 1903-1904, p. 691. [To appear in P. R. Soc. London.]

229. KENNARD, C. P. The mode of infection by Nematoids. *Lancet* 1904, i, p. 1379.
230. KERSHAW, J. A. Excursion to Launching Place. *Victorian Natural.* xx, 9, Zoology, pp. 122-125.
231. *KITZ, T. *Bacterienkunde und pathologische mikroskopie für Thierärzte und Studierende der Thiermedizin.* Wien, 1903, xi+539 pp., 200 figg.
Review by BRAUN, *Zool. Zentrbl.* xi, p. 19.
232. KNIPOWITSCH, N. Explorations zoologiques sur le bateau casse-glace "Ermak" en été de 1901. *Ann. Mus. zool. Acad. St. Petersb.* vi, pp. i-xx, 1 pl.
233. KOFORD, C. A. Biological survey of the waters of Southern California at San Diego. *Science* xix, pp. 505-508.
234. KOROTNEFF, A. DE. Résultats d'une expédition zoologique au lac Baikal, pendant l'été de 1902. *Arch. Zool. exp. Hist. Nat.* (4) ii, xxxii, pp. 1-26.
235. KORSCHULT, E. Über Doppelbildungen bei Lumbriciden. *Zool. Jahrb. Suppl.* vii, 1904, pp. 257-300, 2 pls.
236. KOWALEWSKI, M. Helminthological studies. VIII. On a new tapeworm: *Tatria biremis* n. gen., n. sp. *Bull. Ac. Cracovie* 1904, 7, pp. 367-369, pls. ix & x.
237. *KUNSEMÜLLER, F. Zur Kenntnis der polycephalen Blasenwürmer, insbesondere des *Cænurus cerebralis* und des *Cænurus serialis*. Inaug. Diss. (Tübingen) Jena, 1904, 32 pp., 3 pls. [See *Zool. Rec.* xl, VERMES (218).] Abstract, *Zool. Zentrbl.* xi, pp. 443-445.
238. KUNSTLER, J. & GRUVEL, A. Sur le développement d'éléments particuliers de la cavité générale du Siponcle. *Pr. verb. Soc. Sci. Bordeaux* 1896-97, pp. 57-60.
239. LADREY, F. Sur le pigment de *Sipunculus nudus*. *C.R. Soc. Biol.* lvi, pp. 850-852.
240. —. Sur les urnes de *Sipunculus nudus*. *C.R. Ac. Sci.* cxxxix, 2, pp. 370-371.
241. LAIDLAW, F. F. Notes on some Polyclad *Turbellaria* in the British Museum. *Mem. Manchester Soc.* xlviii, No. 15, 6 pp.
242. LAMPLUGH, G. W., KILROE, J. R., M'HENRY, A., SEYMOUR, H. J., WRIGHT, W. B. & MUFF, H. B. The geology of the county of Belfast. *Mem. geol. Surv. Ireland* 1904, 166 pp.
243. LANDER, C. H. The anatomy of *Hemiurus crenatus* (Rud.) Lühe, an appendiculate Trematode. *Bull. Mus. Harvard* xlv, No. 1, pp. 1-27, 4 pls.
244. LAUTERBORN, R. Beiträge zur Fauna und Flora des Oberrheins und seiner Umgebung. *Mt. Pollichia Jahrb.* lx, 19, pp. 42-130.
245. *——. Leonhard Baldners Vogel-, Fisch-, und Tierbuch. Ludwigs-hafen 1903, lxvi, 177 pp.
Review, *ZSCHOKKE, Zool. Zentrbl.* xi, pp. 412-415.
250. LAVERAN, —. A new Parasite *Piroplasma donovani*. *Lancet* 1904, i, p. 1021.
251. LEBOUR, M. V. A preliminary note on a Trematode parasite in *Cardium edule*. *Rep. Northumberland Sea Fisheries Comm.* 1904, p. 82, figg. 1-3. [Not named.]

252. LE DANTEC, A. Un cas d'hématurie bilharzienne provenant du Natal. C.R. Soc. Biol. lvii, pp. 399 & 400.
253. LÉGER, L. Considérations sur le genre *Triactinomyxon* et les Actinomyxides. C.R. Soc. Biol. lvi, pp. 846-848.
254. —. Sur la sporulation du *Triactinomyxon*. T. c. pp. 844-846, 4 figg.
255. LEISHMAN, Major W. B. Note on the nature of the parasitic bodies found in Tropical Splenomegaly. Brit. Med. J. 1904, i, p. 303.
256. LEON, N. Note sur la fréquence des Bothriocéphales en Roumanie. Bull. Soc. Bucarest xiii, pp. 286 & 287.
257. LEVI, G. Sull' origine delle cellule sessuali. Monit. Zool. ital. xv, pp. 244-246. [*Ascaris*.]
258. LHOMME, —. Coquilles fossiles trouvées en 1903 dans les sables de Saint-Gobain (Yprésien). Feuille Natural. (4) xxxiv, pp. 103-106.
259. LINDER, C. Étude de la faune pélagique au Lac de Bret. Rev. Suisse Zool. xii, pp. 149-258, pl. iv.
260. LINSTOW, O. v. Neue Beobachtungen an Helminthen. Arch. mikr. Anat. lxi, 3, pp. 484-498, pl. xxviii.
261. —. Beobachtungen an Nematoden und Cestoden. Arch. Naturg. 1904, i, pp. 297-308, pl. xiii.
262. —. Bericht über die wissenschaftlichen Leistungen in der Naturgeschichte der Helminthen im Jahre 1900. Arch. Naturg. 1897, ii, 3 [published in 1904], pp. 1-50.
263. —. 1901. T. c. pp. 50-97.
264. —. Neue Helminthen aus Westafrika. Centrbl. Bakter. xxxvi, pp. 379-383, 1 pl.
265. —. Neue Helminthen. Op. cit. xxxvii, pp. 678-683, 11 figg.
266. —. Ueber zwei neue Entozoa aus Acipenseriden. Annuaire Mus. St. Petersb. ix, pp. 17-19, 6 text-figg.
267. —. Entozoa des Zoologischen Museums der Kaiserlichen Akademie der Wissenschaften zu St. Petersburg. II. Op. cit. viii, pp. 265-294, pls. xvii-xix.
268. —. *Nematoda* in the collection of the Colombo Museum. Spolia Zeylan. i, 4, pp. 91-104, 2 pls.
269. LINVILLE, H. R. The natural history of some tube-forming Annelids (*Amphitrite ornata*, *Diopatra cuprea*). Mark Anniv. Vol. 1903, New York, pp. 227-235.
270. LIVANOW, N. Untersuchungen zur morphologie der Hirudineen. Zool. Jahrb. Anat. xx, pp. 153-226, pls. ix-xi.
271. LOEB, L. & SMITH, A. J. Ueber eine die Blutgerinnung hemmende Substanz in *Anchylostoma caninum*. Centrbl. Bakter. xxxvii, pp. 93-98.
- LOEPER, M. [See BRAULT & LOEPER (47).]
272. LOIR, A. *Ascaris canis* de taille extraordinaire. Arch. parasit. vii, p. 483. [Reported by BLANCHARD.]
273. LOMMEN, C. P. The metamerism of the nervous system in *Arenicola cristata*. Biol. Bull. vi, pp. 321 & 322.

274. LONGCHAMPS, M. DE SELYS. Développement postembryonnaire et affinités des *Phoronis*. Mem. Ac. Belgique i, 1904, 150 pp., 7 pls. [Affinities, pp. 129 & 130.]
275. LOOSS, A. Zur Kenntnis des Baues des *Filaria loa* Guyot. Zool. Jahrb. Syst. xx, pp. 549-574, pl. xix.
276. ——. Zum Bau des erwachsenen *Ancylostomum duodenale*. Centrbl. Bakter. xxxv, pp. 752-762.
277. LOPPENS, K. Sur une variété de *Membranipora membranacea* L. et sur quelques animaux marins vivant dans l'eau saumâtre. Ann. Soc. Zool. Belgique xxxviii, Bull. pp. cxlii & cxliii. [Refers to *Vermes*.]
278. LORD, J. E. Notes. iii. On a new Rotifer. Tr. Manchester Micr. Soc. 1903, pp. 78-80, pl. iii, fig. 3.
279. LOW, G. C. *Filaria perstans*. Lancet 1904, i, pp. 752 & 753.
280. ——. *Filaria perstans* and the suggestion that it belongs to the genus *Tylenchus* (Bastian). T. c. pp. 420 & 421, 4 figg.
281. ——. A new *Filaria* in a monkey. [Uganda.] J. trop. Medicine vii, p. 2.
- LUDWIG, A. [See FALKNER & LUDWIG (135).]
282. LÜHE, M. Geschichte und Ergebnisse der Echinorhynchen-Forschung bis auf Westrumb (1821, mit Bemerkungen über alte und neue Gattungen der Acanthocephalen). Zool. Ann. i, 2, pp. 139-250. *Echinorhynchus* spp. descriptions.
284. LUTHER, A. Die Eumesostominen. Zeitschr. wiss. Zool. lxxvii, pp. 1-272, pls. i-ix, 16 figg.
285. ——. Planktologiska och hydrofaunistiska studier i Lojo sjö under sommaren 1901. Medd. Soc. Faun. Fenn. xxviii, pp. 52-55.
286. MACCALLUM, W. G. *Echinostomum garzettæ* n. sp. (Voyage of Dr W. Volz). Zool. Jahrb. Syst. xx, pp. 541-548, 1 fig.
287. MACLAREN, N. Beiträge zur Kenntnis einiger Trematoden (*Diplectanum equans* Wagener und *Nemathobothrium molæ* n. sp.). Jena. Zeitschr. xxxviii, 3, pp. 573-618, pls. xx-xxii, 6 text-figg.
288. MADSEN, V. On Jurassic fossils from East-Greenland. Medd. Gronland xxix, 1, pp. 159-210, pls. vi-x.
289. MAEHRENTHAL, F. C. v. Entwurf von Regeln der Zoologischen Nomenclatur. Als Grundlage für eine Neubearbeitung der internationalen Regeln der internationalen Nomenclatur Commission. Zool. Ann. i, 2, pp. 89-138.
290. MALAQUIN, A. La céphalisation chez les Annélides et la question du métamérisme. C.R. Ac. Sci. cxxxviii, pp. 821-824.
291. MAN, J. G. DE. Ein neuer freilebender Rundwurm aus Patagonien, *Plectus* (*Plectoides*) *patagonicus* n. sp. Ber. Senckenberg. Ges. 1904, pp. 41-46, 6 figg.
- MANDOUL, H. [See JAMMES & MANDOUL (216).]
292. MARCHAL, P. Recherches sur la biologie et le développement des Hyménoptères parasites. Arch. Zool. exp. xxxii, 3, pp. 257-335, pls. ix-xiii.

Discusses budding in other groups of animals.

293. MARKOW, M. Essai sur la faune des Turbellariés dans les gouvernements de Kharkow et de Poltawa. Trudui Kharkov. Univ. xxxix, pt. i, pp. 1-80. [In Russian.]
294. MARENZELLER, E. V. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U.S. Fish Comm. Steamer "Albatross," during 1891, Lieut. Comm. Z. L. Tanner, U.S.N. commanding. xxxiii. Stein- und Hydro-Korallen, 3 pls. xxxiv. *Lagisca irritans* sp. nov. ein symbiont von Hydrokorallen, 1 pl. Bull. Mus. Harvard xliii, Nos. 2 & 3, pp. 75-94.
- MAROTEL. [See CARAGEAN & MAROTEL (69).]
295. MARPMANN, —. Die Präparation der Planarien. Zeitschr. ang. Mikr. ix, 12, pp. 328 & 329.
296. MARTIN, G. C. *Vermes*. Maryland Geol. Surv. 1904, p. 430.
297. MARTINI, E. Protozoen im Blute der Tropenkolonisten und ihrer Haustiere. Verh. Ges. deutsch. Naturf. 1904, ii, 2, pp. 501 & 502.
298. MARVAL, L. DE. Sur les Acanthocéphales d'Oiseaux. Note préliminaire. Rev. Suisse Zool. xii, pp. 573-583.
299. MATTIESEN, E. Ein Beitrag zur Embryologie der Süßwasserendocölen. Zeitschr. wiss. Zool. lxxvii, pp. 274-361, pls. x-xiii.
300. MAXWELL, S. S. Comparative study of muscular tonus. Science xix, p. 249.
301. MEISENHEIMER, J. Review of ROMER & SCHAUDINN'S Fauna Arctica i, 1. Einleitung, Plan des Werkes und Reisebericht. Jena, 1900, pp. 1-84, 2 pls. Zool. Zentrbl. xi, pp. 179-183.
302. MEISSNER, W. Ueber das Plankton des Flusses Murgab, Merw, Turkestan. Zool. Anz. xxvii, 1904, pp. 648-650, 3 figg.
303. MELL, C. Die von Oscar Neumann in Nordost-Afrika gesammelten Landplanarien. Zool. Jahrb. Syst. xx, pp. 471-490, pl. xvii.
304. —. Die Landplanarien der Madagassischen Subregion. Abh. Senckenb. Ges. xxvii, 2, pp. 193-236, 3 pls., 4 text-figg.
- MESNIL, F. [See CAULLERY & MESNIL (76-80).]
305. MICHAELSEN, W. Über eine *Trinephrus*-Art von Ceylon. Mt. Mus. Hamburg xxi, pp. 125-131.
306. —. Revision der composition Styeliden oder Polyzoiner. T. c. pp. 1-124, 2 pls.
Affinities of worms discussed.
307. —. Oligochaeten von Peradeniya auf Ceylon, ein Beitrag zur Kenntnis des Einflusses botanischer Gärten auf die Einschleppung peregriner Thiere. SB. Böhmisch. Ges. 1903, xl, 16 pp., 6 figg.
308. MILLER, D. J. M. Tapeworm in a Child. Lancet 1904, i, p. 1751.
309. MIRANDA RIBEIRO, A. DE. Notas Zoologicas. Un *Distomum* des aves. Arch. Mus. Rio Janeiro xii, 1903, pp. 137 & 138.
Review in Zool. Zentrbl. xi, p. 280.
310. MONTGOMERY, T. H. The development and structure of the larva of *Paragordius*. P. Ac. Philad. lvi, 3, pp. 738-755, pls. xlix & l.
311. MONTICELLI, F. S. Il genere *Lintonia* Montic. Arch. Zool. ii, 1, pp. 117-124, pl. 7.

312. MOORE, J. P. A synopsis of the Annelids of the Woods Hole region. *Science* xix, p. 250.
313. —. Descriptions of two new species of *Polychæta* from Woods Hole, Massachusetts. *P. Ac. Philad.* lv, 3, pp. 720–726, pl. xl.
314. —. Some pelagic *Polychæta* new to the Woods Hole fauna. *T. c.* pp. 793–801, pl. lv. [1 n. sp.]
315. —. New *Polychæta* from California. *T. c.* pp. 484–503, pls. xxxvii & xxxviii.
316. —. A new generic type of *Polygordida*. *Amer. Natural.* xxxviii, pp. 519 & 520.
317. — & BUSCH, KATHARINE J. *Sabellida* and *Serpulida* from Japan, with descriptions of new species of *Spirorbis*. *Op. cit.* lvi, i, pp. 157–179, pls. xi & xii, 8 text-figg.
318. MOREIRA, C. Vermes Oligochetos do Brazil. *Arch. Mus. Rio Janeiro* xii, 1903, pp. 128–136.
319. MORGAN, T. H. Notes on regeneration. *Biol. Bull.* vi, pp. 159–172.
320. —. The control of Heteromorphosis in *Planaria maculata*. *Arch. Entwicklmech.* xvii, pp. 683–695, 1 fig.
321. —. An analysis of the phenomena of organic polarity. *Science* xx, pp. 742–748.
322. —. Polarity and axial heteromorphosis. *Amer. Natural.* xxxviii, pp. 502–505.
323. — & SCHIEDT, ALICE E. Regeneration in the Planarian *Phagocata gracilis*. *Biol. Bull.* vii, pp. 160–165.
324. MOSSERI, V. La maladie vermiculaire. Récemment observée en Égypte sur les bananiers, betteraves, etc., causé par l'*Heterodera radicola* (Greef-Muller) avec une observation sur les Orobanches. *Bull. Inst. Egypt.* iv, pp. 5–35, 7 figg.
325. MRÁZEK, A. Über eine neue polypharyngeale Planarienart aus Montenegro (*Pl. montenigrina* n. sp.). *SB. Bohmisch. Ges.* 1903, xxxiii, 43 pp., 2 pls.
326. MUNTHE, H. Stratigrafiska studier öfver gotlands Silurlager. *Sveriges geol. Unders. Afh.* 192, 55 pp.
327. MURRAY, J. Some Scottish Rotifers (*Bdelloida*). *Ann. Scott. Nat. Hist.* No. 51, 1904, pp. 160–166.
328. NELSON, J. A. The early development of *Dinophilus* as compared with that of Annelids. *Amer. Natural.* xxxviii, pp. 500 & 501.
329. —. The early development of *Dinophilus*: a study in cell-lineage. *P. Ac. Philad.* lvi, 3, pp. 687–737, pls. xliii–xlvi, 4 charts, 6 figg.
 1. Introductory and historical. 2. Material and methods. 3. Nomenclature. 4. History of the cleavage to the formation of the germ layers. 5. Outline of further development. 6. History of first quartette. 7. History of second and third quartettes. 8. History of fourth and fifth quartettes. 9. Axial relations. 10. Phylogenetic relationships of *Dinophilus* in the light of its early development.
330. NEPPI, V. Über einiger exotische Turbellarien. *Zool. Jahrb. Syst.* xxi, 3, pp. 303–326, pls. ix & x.
331. NERESHEIMER, E. Über *Lohmannella catenata*. *Zeitschr. wiss. Zool.* lxxvi, pp. 137–166, pls. x & xi.

332. NEVEU-LEMAIRE, M. LE. Mission scientifique de MM. G. de Créquimontfort et E. Sénéchal de la Grange dans l'Amérique du Sud. Bull. Soc. zool. France xxix, 4, pp. 82-89.
333. NOBRE, A. Subsídios para o estudo da fauna marinha do sul de Portugal. Ann. Sci. nat. Porto viii, pp. 153-160. [*Vermes*, p. 160, 4 spp.]
334. —. Subsídios para o estudo da fauna marinha do norte de Portugal. T. c. pp. 37-94. [*Vermes*, pp. 88-92.]
335. NOËL, C. Sur la faune des lydiennes du grès Vosgien. C.R. Ac. Sci. cxxxviii, pp. 1531-1533.
336. —. La strongylose des moutons, Naturaliste (2), No. 424, p. 248.
337. NUSBAUM, J. Recherches sur la régénération de quelques Polychètes. Bull. Ac. Cracovie 1904, 9, pp. 401-409.
338. —. Vergleichende Regenerationsstudien. II. Ueber die Regeneration des Vorderteiles des Enchytraeidenkörpers nach einer künstlichen Operation. Arch. Polon. ii, 3, pp. 233-258, pl. vii.
339. ODHNER, T. *Urogonoporus armatus* Lühe, 1902, die reifen Proglottiden von *Trilocularia gracilis* Olsson, 1869. Arch. parasit. viii, pp. 465-471.
340. ORLANDI, S. Rigenerazione cefalica naturale in alcune Maldanidi. Atti Soc. Ligustica xiv, pp. 160-164, 4 figg. [See Zool. Rec. xl, VERMES (314).]
341. OSBORN, H. L. On the habits and structure of *Cotylaspis insignis* Leidy, from Lake Chautauqua, New York, U.S.A. Zool. Jahrb. Anat. xxi, 2, pp. 201-242.
342. D'OSSAT, DE A. Terza contribuzione allo studio della fauna fossile paleozoica delle Alpi Carniche. Atti Acc. Lincei (5) iv, pp. 84-120, 1 pl.
343. OSTROUMOFF, A. Comptes-rendus des dragages et du plancton de l'expédition du "Selianik." Bull. Ac. St. Petersburg. (5) v, pp. 33-92 (1896).
344. PARKER, G. H. Maldivian cephalochordates, with the descriptions of a new species from Florida. Bull. Mus. Harvard xvi, No. 2, pp. 39-49, 2 pls.
345. PARKINSON, J. H. The zoning of the culm in South Germany. Geol. Mag. (5) i, pp. 272-276.
346. PAULSEN, O. Plankton-investigations in the waters round Iceland in 1903, 2 maps. Medd. Komm. Havund. i, p. 40.
347. PAVESI, P. Esquisse d'une faune Valdôtaine. Atti Soc. Ital. xliii, 1904, pp. 191-260.
- PEARL, R. [See RAYMOND PEARL & FULLER (365).]
348. PÉREZ, C. & GENDRE, E. Sur l'ovogénèse du *Branchellion*. C.R. Soc. Biol. lvii, pp. 605 & 606.
349. — & —. Sur les fibres musculaires du *Branchellion*. T. c. pp. 113-115.
350. PETRUNKEWITSCH, A. Künstliche Parthenogenese. Zool. Jahrb. Suppl. vii, pp. 77-138, pls. viii-x.
351. PIERANTONI, U. Altri nuovi oligocheti del Golfo di Napoli. (*Limnodriloides* n. gen.) Il nota sui *Tubificidae*. Boll. Soc. Napoli (1) xvii, pp. 185-192, 3 figg.

352. POLÉNOFF, B. Description géologique de la partie nord-ouest de la 15-me feuille du viii zone et de la partie sud-ouest de la 15-me feuille du vii zone de la carte générale du gouvernement Tomsk. Trav. geol. St. Petersb. iii, 1901, pp. 133-339.
353. *PONOMAROFF, TATIANA. Recherches expérimentales sur la greffe des Echinocoques dans le cavité abdominale des lapins, 1903. [Thesis.] Centrbl. Bakter. xxxiv, p. 623.
354. PORTA, A. Sulla *Spiroptera sanguinolenta* Rud. Atti Soc. Modena (4) iv, 35, p. 40.
355. *———. Gli Echinorinchi dei Pesci. Camerino, Savini, 1904, 78 pp. Title in Monit. Zool. ital. xv, p. 374.
356. POWELL, A. The life-span of the Guinea-worm. Brit. Med. J. 1904, i, p. 73.
357. PRATT, H. S. Descriptions of four Distomes. Mark Anniv. Vol. 1903, New York, pp. 25-38, pl. iv.
358. PRENANT, A. Sur la structure des cellules épithéliales intestinales de *Distomum hepaticum*. C.R. Soc. Biol. lvi, pp. 523-525.
PRITCHARD, G. B. [See HALL & PRITCHARD (184).]
359. *RAGAZZI, V. Sulla presenza dell' *Ascaris mystax* Zeder, nell' uomo. Ann. Med. navale (9) ii, pp. 509-520, Roma, 1903.
Title in Monit. Zool. ital. xv, p. 211.
360. RANGE, P. Das Diluvialgebiet von Lübeck und seine Dryastone nebst einer vergleichenden Besprechung der Glazialpflanzen führenden Ablagerungen überhaupt. Zeitschr. Naturw. lxxvi, pp. 161-273, 1 pl. [Vermees, p. 239.]
361. RANSOME, F. L. The geology and ore deposits of the Bisbee quadrangle, Arizona. Prof. Papers U. S. Geol. Surv. 21, 1904, 112 pp.
362. RANSOM, B. H. Manson's eye-worm (*Oxyspirura mansonii*) with a general review of Nematodes parasitic in the eyes of birds, and note on the spiny-suckered tapeworm of chickens (*Davainea echinobothrida* [= *Taenia botriophiles*] and *D. tetragona*). Bull. U. S. Dep. Agric. Animal Ind. 60, 1904, 72 pp., 52 figg.
RÁTZ, I. [See ISTVÁN RÁTZ (210-212).]
363. RÁTZ, S. v. *Dibothriocephalus latus* im Hunde. Centrbl. Bakter. xxxvi, pp. 384-387.
364. RAYMOND, G. Reptomonas ou Cercomonas? Microgr. prep. xii, 3, pp. 137 & 138, 5 figg.
365. RAYMOND PEARL & FULLER, W. N. Variation and correlation in the earthworm. (Abstract.) Rep. Michigan Ac. v, pp. 200-202.
366. REEKER, H. Verwachsungsversuche mit Regenwürmern. Jahresber. Westfal. Ver. xxxi, pp. 180-183.
367. REGNY, P. E. VINASSA DE. Fossili ed impronte del Montenegro. Boll. Soc. geol. Ital. xxiii, pp. 307-322, pl. ix.
368. REMÉŠ, M. Zkameněliny bludných balvanů z okolí Přibora. Vestník. Klub. Prostějove 1904, vi, pp. 107 & 108. [Note on memoir of 1898.]
369. REMLINGER, P. Filaire de Méline. Eosinophilie. C.R. Soc. Biol. lvii, pp. 76 & 77.
370. RENDALL, P. *Bilharzia hæmatobia*. Lancet 1904, i, pp. 755 & 756.

371. RETZIUS, G. Zur Kenntnis der Spermien der Evertebraten. Biol. Untersuch. xi, pp. 1-32, pls. i-xiii.
372. RICCI, O. Un' autoesperienza a proposito della Cisticercosi bovina. Boll. Naturalista xxiv, pp. 85-87.
373. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. Ann. Univ. Lyon fasc. xiv, 252 pp., viii pls. [*Vermes*, *Serpula* p. 201.]
374. RIGBY, J. A. A case of tapeworm in a child. Lancet 1904, i, pp. 1348 & 1349.
375. RITTER, W. E. & DAVIS, B. M. Studies on the ecology, morphology, and speciology of the young of some Enteropneusta of Western North America. Univ. Calif. publ. Zool. i, 5, pp. 171-210, pls. xvii-xx.
376. ROHDE, E. Untersuchungen über den Bau der Zelle. iv. Zum histologischen Wert der Zelle. Zeitschr. wiss. Zool. lxxviii, pp. 1-149, pls. i-vii.
377. ROSA, D. Gli Oligocheti raccolti in Patagonia. Atti Soc. Modena (4) iv, 35, pp. 7-10.
378. —. *L'Allolobophora (Eophila) nematogena* n. sp., e i suoi speciali Linfociti. Op. cit. (4) v, 36, pp. 11-13.
379. —. Un lombrico cavernicolo (*Allolobophora spelæa* n. sp.). Op. cit. (4) iv, 35, pp. 36-39.
380. ROSENFELD, G. Studien über das Fett der Meeresorganismen. Wiss. Meeresuntersuch. v, 2, pp. 57-85.
381. ROSS, E. H. *Bilharzia hæmatobia*. Lancet 1904, i, p. 687.
382. ROSSETER, T. B. The genital organs of *Tenia sinuosa*. J. Quekett Club ii, No. 55, pp. 81-90, pl. v.
383. ROUSSEL, M. Tableau stratigraphique des Pyrénées. Bull. Carte geol. France xv, No. 97, pp. 1-116, 3 pls., 66 figg.
384. ROVERETO, G. Studi monografici sugli Anellidi fossili. Pal. Ital. x, 1904, pp. 1-73, pls. i-iv.
385. ROWE, A. W. The zones of the white chalk of the English coast. iv. Yorkshire. P. Geol. Ass. xviii (4), pp. 193-296, pls. xvii-xl. *Serpula* spp., p. 294.
386. RUEDEMANN, R. Paleontologic Papers. II. Trenton conglomerate of Rysedorph Hill, Rensselaer Co. N. Y. and its fauna. Rep. N. York Mus. lv, pp. 3-114.
387. RUGE, R. Der *Anopheles maculipennis* (Meigen) als Wirt eines *Distomum*. Centrbl. Bakter. xxxv, referate, p. 258.
388. SABUSSOW, H. Tricladenstudien. iv. Erster vorläufiger Bericht über die von Herrn W. Garjajew im Baikalsee gesammelter Planarien. Trudui Kharkov. Univ. xxxvi, No. 6, pp. 1-58, 1 pl.
389. SAINT-HILAIRE, K. Untersuchungen über den Stoffwechsel in der Zelle und in den Geweben. II. Tr. Soc. Imp. Nat. St. Peters. xxxix, 1903, pp. 235-365, pls. vi & vii.
Russian with a German résumé.
390. SALA, L. Intorno ad una particolarità di struttura delle cellule epiteliali che tappezzano il tubo ovarico e spermatico degli Ascaridi. Rend. Ist. Lombardo xxxvii, 16, pp. 874-887, 1 pl.

391. SALMON, D. E. A new Nematode (*Gongylonema ingluvicola*) parasitic in the crop of chickens. Bull. U. S. Dep. Agric. Animal Ind. lxiv, 3 pp., 2 figg.
392. —. A new parasite (*Strongylus quadriradiatus* n. sp.) found in the pigeon. Op. cit. xlvii, 6 pp., 10 figg.
393. SANDER, L. Praktische Schlussfolgerungen aus den neusten Trypanosoma-Forschungen. Verh. Ges. deutsch. Naturf. 1904, ii, 2, p. 303.
394. SÁNDOR GORKA. Az állatok psychikai életéről. Allatt. Kozl. Magyar Tars. i, 1902, pp. 62-72.
395. —. Az állatok psychikai életéről. T. c. pp. 104-113, 8 figg.
396. SCHARFF, R. F. *Hirudinea*. Irish Natural. xiii, p. 203. [Three fresh-water leeches found at Sligo.]
397. SCHAUDINN, —. Generations- und Wirtswechsel bei *Trypanosoma* und *Spirochäte*. Centrbl. Bakter. xxxv, Referate, p. 312.
398. SCHEPOTIEFF, A. Untersuchungen über die Borstentaschen einiger Polychäten. Zeitschr. wiss. Zool. lxxvii, pp. 586-605, pls. xxvi-xxviii.
399. —. Zur Organisation von *Rhabdopleura*. Bergens Mus. Aarborg 1904, No. 2, 21 pp., 3 pls.
SCHIEDT, ALICE E. [See MORGAN & SCHIEDT (323).]
400. SCHLEIP, K. Die Trichinosis-epidemie in Homberg und die für Trichinosis charakteristische Eosinophilie. Verh. Ges. deutsch. Naturf. 1904, ii, 2, pp. 59-62.
401. SCHNEF, P. Die Landfauna der Marschall-Inseln nebst einigen Bemerkungen zur Fauna der Insel Nauru. Zool. Jahrb. Syst. xx, 1904, pp. 387-412.
402. SCHNEIDER, P. *Oxyuris vermicularis* im Beckenperitoneum eingekapselt. Centrbl. Bakter. xxxvi, pp. 550-554.
403. SCHNEIDER, G. Beiträge zur Kenntnis der Helminthenfauna des Finnischen Meerbusens. Acta Soc. Faun. Fenn. xxvi, No. 3, 36 pp., 1 pl.
404. —. Anleitung zum Sammeln von Fischparasiten. KB. Ver. Riga xlvi, pp. 10-17.
405. SCHRÖDER, O. Beiträge zur Kenntnis der Bauchsinnesorgane (Bauchaugen) von *Eunice viridis* Gray, sp. (*Palolo*). Zeitschr. wiss. Zool. lxxix, i, pp. 132-150.
— [See also SCHUBERG & SCHRÖDER (406).]
406. SCHUBERG, A. & SCHRÖDER, O. *Myenchus bothryophorus* n. sp., ein in den Muskelzellen von *Nephelis* schmarotzender neuer Nematode. Zeitschr. wiss. Zool. lxxvi, pp. 409-421, pl. xxx.
407. —. Über einen in den Muskelzellen von *Nephelis* schmarotzenden neuen Nematoden, *Myenchus bothryophorus* n. g., n. sp. (Vorläufige Mitteilung). Verh. Ver. Heidelb. vii, pp. 629-632. [Cf. (406).]
408. SCHULTZ, E. Über Reduktionen. I. Über Hungererscheinungen bei *Planaria lactea*. Arch. Entwicklmech. xviii, pp. 555-577, pl. xxxiv.
409. —. Über Regenerationsweisen. Biol. Centrbl. xxiv, pp. 310-317.

410. *SCHUPFER, F. Sopra un caso di lombricosi epatica. Gazz. Ospedali xxv, pp. 294-296, 1904.
From Monit. Zool. ital. xv, p. 211.
411. SCHYDLOWSKY, A. Matériaux relatifs à la faune des Polypes Hydraires des mers arctiques. I. Les Hydraires de la Mer Blanche le long du littoral des Isles Solowetzky. Trudui Kharkov. Univ. xxxvi, pp. 1-276, 5 pls. [In Russian. Mentions several worms.]
412. SCOTT, J. *Bilharzia haematobia* in Persia. Brit. Med. J. 1904, i, p. 725.
413. SCOTT, A. Some parasites found on fishes in the Irish Sea. P. Liverp. biol. Soc. xviii, pp. 113-125.
414. SCRIBAN, J. A. Contribution à la faune des Hirudinées d'eau douce de Roumanie. Ann. Univ. Jassy iii, pp. 17-20.
415. SEKERA, E. O původu zelené barvy u některých ploštěnek. Vestník. Klub. Prostějove vii, pp. 93-107.
Mentions *Convoluta roscoffensis* and *Mesostoma viviparum*.
416. SELOUS, C. F. Simultaneous occurrence of *Filaria* and malarial parasites in the blood. Lancet 1904, ii, pp. 1284 & 1285; Brit. Med. J. 1904, ii, p. 1248.
417. SFAMENI, P. Les vésicules de la môle hydatigène ne représentent pas des villosités choriales altérées, mais une néoproduction exclusivement épithéliale. La môle vésiculaire et le chorio-épithélioma malin sont histologiquement identiques. Arch. ital. Biol. xl, pp. 219-246.
418. SKORIKOW, A. S. Recherches sur le plancton de la Néva. Trudui Kharkov. Univ. xxxix, pp. 87-106, 1 pl.
419. —. Über das Sommer-Plankton der Nawa und aus einem Teile des Ladoga-Sees. Biol. Centrbl. xxiv, pp. 353-366. [List of *Rotifera* pp. 356 & 362.]
420. SMALLWOOD, W. M. The maturation, fertilization and early cleavage of *Haminea solitaria*. Bull. Mus. Harvard xlv, No. 4, pp. 261-309, 13 pls. [Unimportant for *Vermes*.]
SMITH, A. J. [See LOEB & SMITH (271).]
421. SMITH, J. C. *Synchaeta bicornis*: a new Rotifer from the brackish waters of Lake Pontchartrain, Louisiana. Tr. Amer. micr. Soc. xxv, pp. 121-126, pl. xviii.
422. SMITH, F. & BARRETT, J. T. The vascular system and blood flow in *Diplocardia communis* Garman. Science xix, p. 216.
423. SMYČKA, F. Novější nálezy v čelechovském devonu. Vestník. Klub. Prostějove 1905, vii, pp. 53-72, 1 pl. [*Vermes*, p. 62.]
424. SOBOLEW, D. Zur Stratigraphie des oberen Mitteldevons im polnischen Mittelgebirge. Zeitschr. Deutsch. geol. Ges. lvi, 3, pp. 63-72.
425. SOLLMANN, T. Structural changes of ova in anisotonic solutions and saponin. Amer. J. Phys. xii, pp. 99-115, 46 figg.
426. SOULIER, A. Revision des Annélides de la region de Cette. (Part III.) Mem. Ac. Montpell. (2), iii, pp. 319-374, 12 text-figg.
427. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante. Zapiski Kiev. Obshch. xviii, pp. i-xiii; 1-487; 1-216 + iv pls. [In Russian.]

428. SPENGLER, J. W. Neue Beiträge zur Kenntnis der Enteropneusten.
I. *Ptychodera flava* von Laysan. Zool. Jahrb. Anat. xviii, pp. 271-326, pls. xxiv-xxix.
429. —. II. *P. flava* von Funafuti (Ellice-Gruppe). Op. cit. xx, pp. 1-18, pls. i & ii.
430. —. III. Eine neue Enteropneustenart aus dem Golf von Neapel, nebst Beobachtungen über den postbranchialen Darm der Ptychoderiden. T. c. pp. 315-362, pls. xx-xxii.
431. —. IV. *Ptychodera erythræa*. T. c. pp. 413-428.
432. —. Einige weitere Beobachtungen an *Ptychodera erythræa*. Annuar. Mus. Univ. Napoli i, No. 1, 3 pp., 2 figg.
433. —. [Review of PUNNETT. The Enteropneusta. Fauna Geogr. Maldive Laccadive ii, 2, pp. 631-680, pls. xxxvii-xlvi.] Zool. Zentrbl. xi, pp. 254-260.
434. SPIESS, C. Recherches anatomiques et histologiques sur l'appareil digestif de l'*Aulostoma* (*Aulostoma gulo*). Rev. Suisse Zool. xii, pp. 585-647, pls. x & xi.
435. —. Sur les différenciations épithéliales du tube digestif d'*Hæmopsis sanguisuga*. C.R. Soc. Biol. lvi, pp. 698 & 699.
436. STEVENS, N. M. Further studies on the ovogenesis of *Sagitta*. Zool. Jahrb. Anat. xxi, pp. 242-252, pl. xvi.
437. —. On the germ cells and the embryology of *Planaria simplissima*. P. Ac. Philad. lvi, 1, pp. 208-220, pls. xiii-xvi & 5 text-figg.
438. ZUR STRASSEN, O. L. *Anthraconema* eine neue Gattung freilebender Nematoden. Zool. Jahrb. Suppl. vii, 1904, pp. 301-346, 2 pls., 9 figg. Review, GOLDSCHMIDT, Zool. Zentrbl. xi, pp. 380-382.
439. SZYMÁŃSKI, M. Contribution à l'helminthologie. Bull. Ac. Cracovie 1904, 10, pp. 733 & 734, pl. xvi.
440. TÁLIEW, W. Sur la limite des forêts et des steppes dans le district de Wálki dans le gouvernement de Charkow. Trudui Kharkov. Univ. xxxvi, pp. 3-55.
441. TANIGUCHI, N. Ueber *Filaria bankrofti* Cobbold. Centrbl. Bakter. xxxv, pp. 492-500, 3 figg.
442. TEMPÈRE, J. Les parasites internes de l'homme et des animaux domestiques. Microgr. prep. xii, 1, pp. 25-27, xii, 3, pp. 117-120, xii, 4, pp. 212-214, pls.
443. TERRIEN, F. Cysticerque sous-conjonctival. C.R. Soc. Biol. lvii, pp. 103-105, 2 figg.
444. THEOBALD, F. V. Preventive against liver fluke (*Distomum hepaticum*) in sheep. 2nd Rep. Econ. Zool. Brit. Mus. 1904, p. 133.
445. —. *Enchytræus* worms. T. c. p. 152.
THOMAS, R. A. [See HALDANE & THOMAS (182).]
446. TIRABOSCHI, G. Gli animali propagatori della peste bubbonica. I ratti e i loro ectoparassiti. Boll. Soc. zool. Ital. (2), ii, pp. 88-97.
447. TORREY, J. C. The early embryology of *Thalassema mellita* (Conn.). Ann. N. York Ac. xiv, 3, pp. 165-244, 3 pls.
448. TOULA, F. Geologische Beobachtungen auf einer Reise in die Gegend von Silistria und in die Dobrudscha im Jahre 1892. Jahrb. geol. Reichsanst. liv, pp. 1-46, 3 pls., 19 figg.

449. TRETJAKOFF, D. Die Bildung der Richtungskörperchen in den Eiern von *Ascaris megalocephala*. Arch. mikr. Anat. lxx, 2, pp. 358-383, pl. xxi.
450. —. Die Spermatogenese bei *Ascaris megalocephala*. T. c. pp. 383-438, pls. xxii-xxiv, 1 fig.
451. TRUMBULL, J. *Allolobophora cyanea* in Ireland. Irish Natural. xiii, p. 155.
452. UDE, H. Review of MICHAELSEN, Die Geographische Verbreitung der Oligochaeten. Berlin, 1903, 186 pp., 11 pls. Zool. Zentrbl. xi, pp. 560-587.
453. ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg. Verh. Ver. Hamburg. naturw. xi, pp. 1-24, 1 pl.
454. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Danmarks geol. Unders. iii, 2, pp. 1-359, 3 pls.
455. VALLENTIN, R. Notes on the Falkland Islands. Mem. Manchester Soc. xlviii, No. 23.
Vermes mentioned pp. 8 & 9.
456. VAN BENEDEN, E. Ou demande de nouvelles recherches sur l'organisation et le développement d'un *Phoronis*, en vue d'élucider les rapports existant entre les animaux de ce genre, les genres *Rhabdopleura* et *Cephalodiscus*, et le groupe des Enteropneustes. Bull. Ac. Belgique 1903, pp. 1216-1232.
457. VANHÖFFEN, E. Die Tierwelt des Südpolargebiets. Zeitschr. Ges. Erd. Berlin 1904, pp. 362-370, 11 figg.
458. VERDON, E. S. A case of Filariasis at Fez, Morocco. J. trop. Medicine vii, p. 197.
459. VERRILL, A. E. Additions to the *Turbellaria*, *Nemertina* and *Annelida* of the Bermudas with revisions of some New England genera and species. Tr. Connect. Ac. x (2), pp. 595-671, pl. lxx.
460. —. Additions to the fauna of the Bermudas from the Yale Expedition of 1901, with notes on other species. Op. cit. xi (1), pp. 15-62, pls. i-xi.
461. —. The Bermuda Islands. Op. cit. xi (2), pp. 413-913.
462. *VIGENER, J. Über drei kantige Bandwürmer aus der Familie der Taeniiden. Jahrb. nassau. Ver. lvi, 1903, pp. 115-177, 8 figg., and Zool. Zentrbl. xi, pp. 445 & 446.
463. VOELTZKOW, A. Bericht über eine Reise nach Ostafrika zur Untersuchung der Bildung und des Aufbaues des Riffe und Inseln des westlichen indischen Ozeans. iii. Mafia und Sansibar. iv. Die Comoren. Zeitschr. Ges. Erd. Berlin 1904, pp. 274-301.
Review by MAX, Zool. Zentrbl. xi, pp. 435-437.
464. WALLACE, W. The oocyte of *Tomopteris*. Rep. Brit. Ass. 1903-1904, pp. 282-288.
465. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Denk. Ges. Jena 1904, pp. 133-214, pls. viii & 21 figg. [*Vermes*, pp. 167 & 168; lists of spp.]
466. WEIGELT, C. L'assainissement et le repeuplement des rivières. Mem. Cour. Ac. Belgique lxiv. [*Vermes*, pp. 514-516, figg. 79-82, 84 & 85.]

467. WELLMAN, F. C. Protozoal and entozoal infection of natives of Benguella, Angola, West Africa. *J. trop. Medicine* vii, p. 123.
468. —. Brief conspectus of the tropical diseases common in the highlands of West Central Africa. *T. c.* pp. 52–56. [A new *Filaria*.]
469. *WESENBERG-LUND, C. Studier over de Danske Soers Plankton. Specielle Del, 223 pp., Copenhagen, 1904. [English résumé.] [*Rotifera* and *Nematoda*.]
Review by ZSCHOKKE, *Zool. Zentrbl.* xi, pp. 680–687.
470. WILLEY, A. Littoral *Polychæta* from the Cape of Good Hope. *Tr. Linn. Soc. London* (2), ix, 6, pp. 255–268, pls. xiii & xiv.
— [See also CASTELLANI & WILLEY (73).]
471. WILSON, E. B. Mosaic development in the Annelid egg. *Science* xx, pp. 748–750.
472. WOLLEMAN, A. Ein Aufschluss im Mukronatensenon bei Rotenkamp, nordwestlich von Königsutter. *xiii. Jahresber. Ver. Braunschweig*, pp. 40–42. [*Serpula*.]
473. WOLTERECK, R. Beiträge zur praktischen Analyse der Polygordius-Entwicklung nach dem "Nordsee" und dem "Mittelmeertypus." I. Der für beide Typen gleichverlaufende Entwicklungsabschnitt: vom Ei bis zum jüngsten Trochophora-Stadium. *Arch. Entwicklmech.* xviii, pp. 377–403, pls. xxii & xxiii, 11 figg.
474. WOLTERSTORFF, W. Beiträge zur Fauna der Tucheler Heide. Bericht über eine zoologische Bereisung der Kreise Tüchel und Schwetz im Jahre 1900. *Schr. Ges. Danzig* xi, 1 & 2, pp. 140–234, 1 pl., 1904.
475. WOOD, T. J. Hydatid Cyst. *Lancet* 1904, i, p. 29.
476. WOOD, ELVIRA. Marcellus (Stafford) limestones of Lancaster, Erie Co. N. Y. *Rep. N. York Mus.* lv, pp. 139–181. [*Annelida*, p. 155.]
477. WORTH, E. H. *Bilharzia hematobia*. *Lancet* 1904, i, p. 611.
478. YAKHONTOV, G. Communication de l'excursion sur le lac Baical, faite en été de l'année 1902 par G. Yakhontov. *Protok. Kazan. Univ.* 1902–1903, No. 212, 11 pp. [List of spp. p. 3.]
479. YATSU, N. Experiments on the development of egg fragments in *Cerebratulus*. *Biol. Bull.* vi, pp. 123–136, 5 figg.
ZEDERBAUER, E. [See BREHM & ZEDERBAUER (49).]
480. ZELENY, C. Studies in compensatory regulation. *Science* xix, p. 215.
481. ZIMMERMANN, A. Untersuchungen über tropische Pflanzenkrankheiten. I. *Ber. Land. Forstw. Deutsch-Ostafrika* ii, 1904, pp. 11–36, pls. i–iv.
482. ZSCHOKKE, F. Review of VOIGT, Die Rotatorien und gastrotrichen der Umgebung von Plön. *Forschber. Plön* xi, 1904, pp. 1–180, 7 pls., and *Zool. Zentrbl.* xi, pp. 373–378.
483. —. Review of LAUTERBORN, Die Formenkreis von *Anurea cochlearis*. Ein Beitrag zur Kenntnis der Variabilität bei Rotatorien. I. Morphologische Gliederung des Formenkreises. *Verh. Ver. Heidelb.* vi, 5, 1900, 442–448 pp., pl. x. II. Diecyklische temporale variation von *Anurea cochlearis* vii, 4, 1903, pp. 529–621. [See *Zool. Rec.* xl, VERMES, No. 234.]
Zool. Zentrbl. xi, pp. 786–793.

484. [ZSCHOKKE, F.] Die Darmcestoden der amerikanischen Beuteltiere. Centrbl. Bakter. xxxvi, pp. 51-61, 1 pl.

II. SUBJECT-INDEX.

VERMES.

GENERAL SUBJECT (Vermes collectively or more than one division).

[The following memoirs relate to the general subject or are collective:—BOVERI (40, 41), CAULLERY & MESNIL (77), GINESTE (164), HUBRECHT (204), HUDLESTON (205), LAUTERBORN (244), LUTHER (285), MICHAELSEN (306).]

Relationships to other invertebrate phyla, HUBRECHT (204).

Affinities of worms discussed, MICHAELSEN (306).

†Origin of halolimnic fauna of Lake Tanganyika, HUDLESTON (205).

Affinities of *Actinomyxidae* to *Vermes*, CAULLERY & MESNIL (77).

Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (164).

Constitution of chromatin in the nucleus, BOVERI (40, 41).

Subterranean fauna, Puits de Padirac, VIRÉ, C.R. Ac. Sci. cxxxviii, p. 827.

Finland, plankton collections, LUTHER (285).

Upper Rhine, collections, LAUTERBORN (244).

ANNELIDA.

GEPHYREA.

[The following memoirs relate to *Gephyrea*:—GEROULD (155, 156), HÉRUBEL (194, 195), IKEDA (207), KUNSTLER & GRUVEL (238), LADREYT (239, 240), RETZIUS (371), TORREY (447), VERRILL (460, 461).]

GENERAL BIOLOGY.

On the so-called "urns" in *Sipunculus*, they are not phagocytes, and not parasites, LADREYT (239).

Three forms of pigment in *Sipunculus nudus*, LADREYT (240).

Early embryology of *Thalassema mellita*, TORREY (447).

On the development of the body cavity elements in *Sipunculus*, KUNSTLER & GRUVEL (238).

Development of *Sipunculus nudus*, GEROULD (155).

Embryonal development and its homologue, GEROULD (156).

DISTRIBUTION.

Scandinavian forms, morphology, HÉRUBEL (194, 195).

Japan, n. spp., IKEDA (207).

Bermudas, n. spp., VERRILL (460).

Bermudas, collections, VERRILL (461).

SYSTEMATIC.

- Aspidosiphon truncatus*, *A. steenstrupii*, Japan, IKEDA, J. Coll. Tokyo xx, 4, pp. 38, 40, figg. 66 & 67.
- A. misakiensis*, p. 41, figg. 9, 68-72, *A. uniscutatus*, p. 43, figg. 10, 73-77, *A. angulatus*, p. 45, figg. 11, 78-80, *A. spinalis*, p. 47, figg. 12, 81-85, Japan, IKEDA, t. c.; *A. spinulosum*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 670, n. spp.
- Bonellia minor*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 72, figg. 23, 101 & 102.
- B. miyajimai*, p. 73, *B. misakiensis*, p. 74, figg. 24, 103-105, Japan, IKEDA, t. c. n. spp.
- Clæosiphon japonicum*, Japan, IKEDA, t. c. p. 49, figg. 13, 86-89, n. sp.
- Dendrostoma blandum*, *D. signifer*, pp. 53-57, figg. 14 & 15, 90 & 91, Japan, IKEDA, t. c.
- D. minor*, Japan, IKEDA, t. c. p. 57, figg. 16, 92-95, n. sp.
- Golfingia elongata*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 670, n. sp.
- Phascolion rectus*, p. 15, figg. 45-49, *P. artificiosus*, p. 18, figg. 6, 50-55, Japan, IKEDA, J. Coll. Tokyo xx, 4, n. spp.
- Phascolosoma vulgare*, *P. gouldii*, embryology, GEROULD, Mark Anniv. Vol. pp. 439-452, pl. xxxii; *P. strombi*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 11, pl. iv, figg. 1-9.
- P. nigrum*, p. 3, figg. 1, 25-27, *P. japonicum*, p. 5, figg. 2, 28 & 29, *P. misakitanum*, p. 7, figg. 3, 30-33, *P. okinoseanum*, p. 9, figg. 4, 34-38, *P. ovstoni*, p. 12, figg. 5, 39-44, Japan, IKEDA, J. Coll. Tokyo xx, 4, n. spp.
- Phymosoma onomichianum*, p. 26, figg. 7, 56-58, *P. nahæense*, p. 29, figg. 8, 59-62, Japan, IKEDA, t. c. n. spp.
- Priapulus caudatus*, Scandinavia, varieties; localities where found; morphology, HÉRUBEL, Bull. Soc. zool. France xxix, 5, pp. 100-109, 2 figg., pp. 126-129.
- Thalassema kokotoniense*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 60, fig. 17; *T. mellita*, early embryology and cell lineage, TORREY, Ann. N. York Ac. xiv, 3, pp. 165-244, 3 pls.
- T.*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 40, pl. v, fig. 9; *T. ovstoni*, p. 62, figg. 18, 96 & 97, *T. tænioides*, p. 63, *T. elegans*, p. 65, *T. gogoshimense*, p. 66, fig. 19, *T. mucosum*, p. 68, figg. 20 & 98, *T. fuscum*, p. 69, figg. 21 & 99, *T. inansense*, p. 71, figg. 22 & 100, Japan, IKEDA, J. Coll. Tokyo xx, 4, n. spp.
- Sipunculus nudus*, embryonal development and its homologue, GEROULD, Mark Anniv. Vol. pp. 439-452, pl. xxxii; *S. nudus*, development, GEROULD, Amer. Natural. xxxviii, p. 493; *S. nudus*, "urns," LADREY, C.R. Ac. Sci. cxxxix, 2, pp. 370 & 371; *S. nudus*, three forms of pigment, LADREY, C.R. Soc. Biol. lvi, pp. 850-852; *S. nudus*, body cavity elements, KUNSTLER & GRUVEL, Pr. verb. Soc. Sci. Bordeaux 1896, pp. 57-60; *S. cumanensis*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 32, fig. 63.
- S. amaniensis*, Japan, IKEDA, t. c. p. 36, figg. 64 & 65, n. sp.

POLYCHAETA.

[The following memoirs relate to *Polychæta*:—ALLEN (7, 8), ASHWORTH (14), BOHN (30-34), BOLTON (35), BRASIL (44-46), BROWNE (54), BULLOT (58), CARAZZI (70), CAULLERY & MESNIL (79), EHLERS (130), FAUVEL (137, 138), FOX (147), FOX-STRANGWAYS (148), GIARD (159, 160), GILSON (163), GIRTY (165), GRAVIER (172), HOLM (198), HOLMES (200), HORST

(202), HUBRECHT (203, 204), IWANOW (213), JOHNSON (220), JORDAN (222), JUKES-BROWNE (224), KOROTNEFF (234), LÉGER (253, 254), LINVILLE (269), LOMMEN (273), MADSEN (288), MARTIN (296), MAXWELL (300), MONTGOMERY (310), MOORE & BUSCH (317), MOORE (313, 314), MUNTHE (326), NOBRE (333, 334), NUSBAUM (337), ORLANDI (340), PARKINSON (345), REMEŠ (368), RETZIUS (371), RICHE (373), ROVERETO (384), ROWE (385), SCHEPOTIEFF (398, 399), SCHRÖDER (405), SOLLMANN (425), SOULIER (426), VERRILL (459-461), WALLACE (464), WALTHER (465), WEIGELT (466), WILLEY (470), WILSON (471), WOOD (476), ZELENY (480).]

GENERAL BIOLOGY.

Habits, anatomy, histology, development and parasites of *Arenicola*, ASHWORTH (14).

Anatomy, metamerism of the nervous system in *Arenicola cristata*, LOMMEN (273).

Histology, digestive apparatus *Polychæta*, BRASIL (45).

Otocysts, FAUVEL (138).

Digestive apparatus, BRASIL (45).

Comparative study of muscular tonus, MAXWELL (300).

Morphology of *Chaetopterus*, GRAVIER (172).

Structure of the setæ-pouches, SCHEPOTIEFF (398).

Oocyte of *Tomopteris*, WALLACE (464).

Sense organs of *Eunice viridis* (Palolo worm), SCHRÖDER (405).

†Anatomy of n. spp., ROVERETO (384).

A new generic type of *Polygordidae*, MOORE (316).

Affinities and systematic position, HUBRECHT (204).

Natural history of some tube-forming species, LINVILLE (269).

†Survey, collections, HOLMES (200).

Structural changes of ova in anisotonic solutions and saponin, SOLLMANN (425).

Development and structure of the larva of *Paragordius*, MONTGOMERY (310).

Embryology and cytology of the egg of *Myzostoma glabrum*, CARAZZI (70).

Artificial parthenogenesis and regular segmentation in *Ophelia*, BULLOT (58).

Movements of *Hediste diversicolor*, BOHN (30).

Respiratory movements, BOHN (33, 34).

Regeneration, IWANOW (213).

Regeneration experiments, NUSBAUM (337).

Regeneration of the head in *Clymene* spp., ORLANDI (340).

Compensatory regulation in *Hydroides* and *Apomatus*, ZELENY (480).

DISTRIBUTION.

†Tomsk, collections, POLÉNOFF (352).

†Krakau, Devonian species, GÜRICH (178).

†England, upper chalk, Cretaceous forms, JUKES-BROWNE (224).

†Lancashire coal measures, spp. found, BOLTON (35).

†Yorkshire, white chalk spp. ROWE (385).

†Scarborough, oolitic and Cretaceous forms, FOX-STRANGWAYS (148).

†Cornwall, north coast forms, FOX (147).

Plymouth, n. sp., ALLEN (8).

Lake Baical, collections, KOROTNEFF (234).

†Gotland, list of Silurian forms, MUNTHE (326).

Cape de la Hague, a new parasite on *Polycirrus hematodes*, CAULLERY & MESNIL (79).

- Pas-de-Calais, River Ambleteuse, fauna, n. sp., GIARD (161).
 †South Germany, collections, PARKINSON (345).
 †Solenhofen, fossil fauna, WALTHER (465).
 †Eastern Bohemia, chalk fossils, JAHN (215).
 †Corniche Alps, paleozoic fossils, D'OSSAT (342).
 †Bolderberg, collections, DEWALQUE (124).
 †Dalmatia, Eocene fauna, DAINELLI (111).
 †Silistria, collections, TOULA (448).
 †Grès Vosgien, Epinal, fossil fauna, NOËL (335).
 Cette, collections, SOULIER (426).
 North and South Portugal, marine fauna, synonymy, bibliography, NOBRE (333, 334).
 †East-Greenland, Jurassic *Serpula*, MADSEN (288).
 †Kansas, lower coal measures, BEEDE & ROGERS (23).
 †Tennessee and Kentucky forms from the Silurian and Devonian Limestones, FOERSTE (144).
 †Maryland, n. sp., MARTIN (296).
 †Colorado, Carboniferous forms, GIRTY (165).
 Massachusetts, n. sp., MOORE (314).
 Massachusetts, 2 n. spp., MOORE (313).
 California, n. gen. & n. sp., JOHNSON (220).
 California, n. spp., MOORE (315).
 Senegal, spp., FAUVEL (137).
 Cape of Good Hope, littoral forms, WILLEY (470).
 Malay, palolo and wawo worms, not identical, HORST (202).
 Hawaii, n. sp., JOHNSON (220).
 Bermudas, n. spp., VERRILL (459).
 Bermudas, collections, VERRILL (460).
 Japan, n. spp., MOORE & BUSCH (317).
 †New South Wales, Cretaceous forms, n. spp., ETHERIDGE (133).
 New Zealand, n. spp., EHLERS (130).

SYSTEMATIC.

- Ammotrypane aulogaster*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 9, pl. iii, figg. 6-10.
Amphiglene mediterranea, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
Amphitrite ornata, natural history, LINVILLE, Mark Anniv. Vol. pp. 227-235.
Aphroditidae, respiratory movements, BOHN, C.R. Soc. Biol. lvi, pp. 185 & 186; *A. aculeata*, physiology and morphology of the digestive organs, JORDAN, Zeitschr. wiss. Zool. lxxviii, pp. 165-195, pl. x.
Arabella maculosa, Bermuda, VERRILL, Tr. Connect. Ac. x (2), p. 651, n. sp.
Arenicola, habits, anatomy, histology, development and parasites, ASHWORTH, P. Liverp. biol. Soc. xviii, pp. 209-326, 7 pls.; *A. cristata*, metamerism of the nervous system, LOMMEN, Biol. Bull. vi, pp. 321 & 322; *A. marina*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 9, pl. iii, figg. 11-20.
Aricia setosa, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 651; *A. chevalieri*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 83, figg. 23-28 : n. spp.
Armandia intermedia, Casamance River, Senegal, anatomy, FAUVEL, t. c. p. 86, figg. 29 & 30, n. sp.
Audouinia tentaculata, Luc-sur-Mer, parasitised by a coccid, *Angeiocystis audouinii*, n. sp., BRASIL, C.R. Ac. Sci. cxxxix, 2, pp. 645 & 646.
Autolytus (Proceræa) simplex, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 630, n. sp.

- Axiothella* n. subgen. for *A. catenata*, VERRILL, t. c., p. 657.
- Brada villosa*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, pp. 7-11.
- Branchiomma suspiciens*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 62, pl. ix, figg. 1-6, n. sp.
- Branchiosyllis lamellifera*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 624, n. sp.
- Carobia microphylla* (n. n. for *Eulalia* Schmarda) New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 16, pl. ii, figg. 8 & 9; *C. ochracea*, New Zealand, EHLERS, t. c., p. 15, pl. ii, figg. 5-7, n. sp.
- Chaetopterus*, morphology, GRAVIER, C.R. Ac. Sci. cxxxix, 2, pp. 545 & 546.
- Chrysopetalum elegans*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 668, n. sp.
- Cirratus*, regeneration, IWANOW, Protok. St. Peterb. Obshch. xxxv, 1904, 4, pp. 254-261. [German résumé, pp. 307-309.]
- C. spirabranchus*, p. 492, pl. xxxviii, figg. 26 & 27; *C. luxuriosus*, p. 493, figg. 28-31, California, structure, MOORE, P. Ac. Philad. lvi, *C. (Audouinia) capillaris*, p. 653, *C. websteri*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), n. spp.
- Clymene collaris*, regeneration of the head, ORLANDI, Atti Soc. Ligustica xiv, p. 161, figg. A & B; *C. palermitana*, regeneration of the head, ORLANDI, t. c. p. 162, fig. C.
- C. monilis*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 89, figg. 31-41, n. sp.
- Clymenella (Axiothella) somersi*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 658, n. sp.
- C. insecta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 54, pl. vii, figg. 16-19, pl. viii, figg. 1-5, n. sp.
- Dasychone lucullana*, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
- Desmosyllis* n. gen. for *D. longisetosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 626 & 635, n. sp.
- Diopatra neapolitana*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 62, figg. 1 & 2; *D. cuprea*, natural history, LINVILLE, Mark Anniv. Vol. pp. 227-235.
- D. californica*, California, structure, MOORE, P. Ac. Philad. lvi, 2, p. 484, pl. xxxvii, figg. 1-9, n. sp.
- Drieschia pellucida*, Massachusetts, MOORE, op. cit. lv, 3, p. 794, pl. lv, n. sp.
- Euchone alicaudata*, Japan, MOORE & BUSCH, op. cit. lvi, p. 165, pl. xi, fig. 14-16, pl. xii, fig. 43, n. sp.
- Euclymene* n. n. for *E. coronata* n. sp., Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 655.
- Eulalia megalops*, Bermudas, VERRILL, t. c. p. 601, n. sp.
- Eunice*, spp., structure of setæ-pouches, SCHEPOTIEFF, Zeitschr. wiss. Zool. lxxvii, pp. 586-605, pl. xxvi-xxviii; *E. viridis* (Palolo worm) sense organs, SCHRÖDER, Zeitschr. wiss. Zool. lxxix, pp. 132-150.
- E. biannulata*, California, structure, MOORE, P. Ac. Philad. lvi, p. 487, pl. xxxvii, figg. 10-18, pl. xxxviii, fig. 42, n. sp.
- Euphrosyne capensis*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 256, figg. 1-3.
- Eupolymnia* n. n. (with n. subgen. *Polymniella*) for n. sp. *E. aurantiaca*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 661.
- Eurymedusa picta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 21, pl. iii, figg. 5-9.
- Eusyllis* (n. subgen. *Synsyllis*) *viridula*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 622 & 635, n. sp.
- Exotokas brevipes*, Cette, synonymy, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii, p. 345, fig. 7.

- Flabelligera lingulata*, p. 47, pl. vii, figg. 1-5, *F. semiannulata*, p. 49, figg. 6-10, New Zealand, EHLERS, Abh. Ges. Gotting. iii, n. spp.
- Glycera africana*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 75, figg. 14-17; *G. alba*, spermatozoa, male reproductive organs, RETZIUS, Biol. Untersuch. xi, p. 7, pl. 1, figg. 8-12.
- Glycinde*, spermatozoa, RETZIUS, t. c. p. 7, pl. 1, figg. 13-18.
- Goniada (Glycinde) dorsalis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 38, pl. v, figg. 12-17, n. sp.
- Grubea pusilla*, *G. limbata*, Cette, anatomy, synonymy, SOULIER, Mem. Ac. Montpell. (2) iii, pp. 333-342, figg. 4 & 5.
- Grubeosyllis* n. n. (= *Grubea* Quatr.) *nitidula*, *G. rugulosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 629-633, n. spp.
- Haplosyllis cephalata*, p. 613, *H. palpata*, p. 615, Bermudas, VERRILL, t. c. n. spp.
- Hediste diversicolor*, movements, BOHN, C.R. Soc. Biol. lvii, pp. 297 & 298, 3 figg.
- Hemilepidia erythrotaenia*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2), ix, 6, p. 258, figg. 6-26.
- Hemisyllis* n. gen. for *H. dispar* n. sp., Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 619.
- Heteromorphysa* n. gen. for *H. tenuis* n. sp., Bermudas, VERRILL, t. c. p. 637.
- Hypsicomus lyra*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 161, pl. xi, figg. 7-13, pl. xii, fig. 42, n. sp.
- Lagis koreni*, digestive apparatus, BRASIL, Arch. Zool. exp. Hist. Nat. (4) ii, xxxii, pp. 91-255.
- Laonome ceratodaula* (n. n. for *Sabella Schmarda*) New Zealand, anatomy, EHLERS, Abh. Ges. Gotting. iii, p. 64.
- L. tridentata*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 164, pl. xii, fig. 44, n. sp.
- Leodice elegans*, p. 640, *L. stigmatura*, p. 641, *L. concinna*, p. 643, *L. tenuicirrata*, p. 643, *L. unifrons*, p. 644, *L. margaritacea*, p. 644, Bermudas, VERRILL, Tr. Connect. Ac. x (2), n. spp.
- Lepidonotus polychroma*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 7, pl. i, figg. 1-6; *L. squamatus*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, fig. 1-6; *L. clava semitectus*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 256, fig. 4.
- Leprea haplochata*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 59, pl. viii, figg. 13-18, n. sp.
- Lipobranthus capensis*, Cape of Good Hope, structure, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 266, figg. 23 & 24, n. sp.
- Loimia medusa*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 94, figg. 43-45.
- L. bermudensis*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 664; *L. viridis*, Massachusetts, MOORE, P. Ac. Philad. lv, p. 723, pl. xl, figg. 11-14 : n. spp.
- Lumbriconereis*, structural changes of ova in anisotonic solutions and saponin, SOLLMANN, Amer. J. Physiol. xii, pp. 99-115, 46 figg.; *L. sphaerocephala* (= *Notocirrus Schmarda*) p. 33, pl. v, figg. 3-11, *L. brevicirra*, p. 35, pl. iv, figg. 13-20, pl. v, figg. 1 & 2, New Zealand, EHLERS, Abh. Ges. Gotting. iii.
- L. erecta*, California, structure, MOORE, P. Ac. Philad. lvi, p. 490, pl. xxxvii, figg. 19-22, pl. xxxviii, figg. 23-25; *L. nasuta*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 651 : n. spp.
- Lycastis hawaiiensis*, Hawaii, JOHNSON, Mark Anniv. Vol. 1903, p. 210, figg. 11-13, 17-23, n. sp.
- Lycastoides* n. gen. for *L. alticola* n. sp., Lower California, JOHNSON, t. c. p. 212, figg. 14-16, 24-27.

- Lysidice bilobata*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 645, n. sp.
Maldane disparidentata, California, structure, MOORE, P. Ac. Philad. lvi, p. 494, pl. xxxviii, figg. 32-35, n. sp.
Maldanopsis n. gen. for *M. elongata*, VERRILL, Tr. Connect. Ac. x (2), p. 659.
Marphysa corallina, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 31, pl. iv, figg. 8-12.
M. purcellana, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2), ix, 6, p. 263, fig. 17; *M. regalis*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 636 : n. spp.
Myzostoma glabrum, embryology and cytology of the egg, CARAZZI, Monit. Zool. ital. xv, pp. 62-78, pl. iv, pp. 87-100.
Neanthes capensis, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 261, figg. 9 & 10, pl. xiv, n. sp.
Nematonereis hebes, p. 647, Bermudas, VERRILL, Tr. Connect. Ac. x (2), n. sp.
†*Neomicrorbis* n. gen. for *N. bavaricus*, *N. obretitus*, *N. zitteli*, Kressenberg, ROVERETO, Pal. Ital. x, pp. 50 & 51, pl. iv, figg. 27-29, n. spp.
Nephtys sp. male reproductive glands, RETZIUS, Biol. Untersuch. xi, p. 5, pl. i, figg. 1-7.
N. lyrochaeta, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 72, figg. 9-13, n. sp.
Nereidiidae, respiratory movements, BOHN, C.R. Soc. Biol. lvi, pp. 185 & 186; *Nereis*, comparative study of muscular tonus, MAXWELL, Science xix, p. 249; *Nereis* spp. structure of setæ-pouches, SCHEPOTIEFF, Zeitschr. wiss. Zool. lxxvii, pp. 586-605, pls. xxvi-xxviii; *N. australis*, New Zealand, anatomy, EHLERS, Abh. Ges. Gotting. iii, pl. 26, pl. iii, figg. 16-20, pl. iv, figg. 1 & 2; *N. cultifera*, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
N. graviere, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 66, figg. 3-8; *N. arenaceodentata*, Massachusetts, MOORE, P. Ac. Philad. lv, p. 720, pl. xl, figg. 1-10; *N. ruficeps*, p. 24, pl. iii, figg. 10-15, *N. cricognatha*, p. 29, pl. iv, figg. 3-7, New Zealand, EHLERS, Abh. Ges. Gotting. iii; *N. limnicola*, Lake Merced, JOHNSON, Mark Anniv. Vol. 1903, New York, p. 208, figg. 1-10 : n. spp.
Nerine cirratulus, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
N. perrieri, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 79, figg. 18-21, n. sp.
Nicolea modesta, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 663, n. sp.
Notomastus latericius, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 10, pl. iii, figg. 21-23.
Odontosyllis enopla, *O. nitidula*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 627 & 628, n. spp.
Oncoscolex dicranochaetus (= *O. homochaetus* Schmarda), New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 51, pl. vii, figg. 11-15.
Ophelia [probably n. sp. but unnamed], artificial parthenogenesis and regular segmentation, BULLOT, Arch. Entwicksmech. xviii, pp. 161-170, 13 figg.; *O.*, artificial parthenogenesis and regular segmentation, BULLOT, Univ. Calif. Publ. Physiol. i, 19, pp. 165-174, 8 figg.
Ophiidromus vittatus, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, figg. 12-17.
Opisthosyllis nuchalis, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 620, n. sp.
Pallasia murata, Plymouth, ALLEN, J. Mar. Biol. Ass. vii, 2, pp. 299-304, pl. x, n. sp.
Paragordius varius, development and structure of the larva, MONTGOMERY, P. Ac. Philad. lvi, 3, pp. 738-755, pls. xlix & l.

- Paramarphysa obtusa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 647, n. sp.
- Parmemis capensis*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 258, figg. 7 & 8, 27-29, n. sp.
- Pectinaria (Lagis) australis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 56, pl. viii, figg. 6-12; *P. regalis*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 38, pl. viii, figg. 6 & 7, n. spp.
- Phyllochætopterus*, regeneration, IWANOW, Protok. St. Peterb. Obshch. xxxv, 1904, 4, pp. 254-261. [German résumé, pp. 307-309.]
- Phyllodocidæ*, respiratory movements, BOHN, C.R. Soc. Biol. lvi, pp. 185 & 186.
- Phyllodoce bermudæ*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 600, n. sp.
- Physalidonotus* n. gen. for *Aphrodite squamosa* Quatrefages, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 9.
- +*Placostegus luteolus*, Kressenberg, ROVERETO, Pal. Ital. x, p. 40, pl. iv, fig. 20, n. sp.
- Pæcilochætus*, anatomy, ALLEN, Quart. J. Micr. Sci. xlviii, 1904, pp. 79-151, pls. vi-xii.
- Polycirrus caliendrum*, p. 363, fig. 10, *P. aurantiacus*, p. 369, fig. 11, *P. denticulatus*, p. 370, fig. 12, Cette, synonymy, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii.
- P. corallicola*, *P. penmulifera*, *P. luminosus*, pp. 665 & 666, Bermudas, VERRILL, Tr. Connect. Ac. x (2), n. spp.
- Polydora*, regeneration, IWANOW, Protok. St. Peterb. Obshch. xxxv, 1904, 4 [German résumé, pp. 307-309] pp. 254-261; *P. monilaris*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 43, pl. vi, figg. 5-14, n. sp.
- Polygordidæ*, a new generic type, MOORE, Amer. Natural. xxxviii, pp. 519 & 520.
- Polynoe macrolepidota*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 8, pl. i, figg. 7-9; *P. scolopendrina*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 257, figg. 5-25.
- Pomatocerus strigiceps*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 67, pl. ix, figg. 11-19.
- P. auritubis*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 174, pl. xi, fig. 20, pl. xii, figg. 33-37, n. sp.
- Potamilla laciniosa*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 66, pl. ix, figg. 7-10, n. sp.; *P. casamancensis*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 101, figg. 46-53, n. sp.; *P. acuminata*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 159, pl. xi, figg. 3-6, pl. xii, fig. 41, n. sp.
- Protodrilus symbioticus*, River Ambleteuse, Pas-de-Calais, GIARD, C.R. Soc. Biol. lvi, pp. 295-298, fig. 2, n. sp.
- Protothelpus* n. gen. for *P. tenuis* n. sp., Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 663.
- Protula geniculata*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 168, pl. xi, figg. 17 & 18, pl. xii, fig. 38, n. sp.; +*P. pseudolonganon*, p. 47, *P. septaria*, p. 47, pl. ii, fig. 5, *P. vincenti*, Dieghem, p. 48, pl. iv, fig. 23, *P. æniolum*, Sassello, p. 48, pl. ii, fig. 3, ROVERETO, Pal. Ital. x, n. spp.
- Pterocirrus brevicornis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 17, pl. ii, figg. 10-12, n. sp.
- Pygospio elegans*, Cette, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii, p. 320, fig. 1.
- Sabella japonica*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 157, pl. xi, figg. 1 & 2, pl. xii, figg. 39 & 40, n. sp.
- Sabellaria spinulosa*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 9, pl. iii, figg. 1-5.

- Scoloplos cylindrifera*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 45, pl. vi, figg. 16-19, **n. sp.**
- +*Serpula athesiana*, Verona, p. 7, pl. ii, fig. 3, *S. cariosa*, p. 7, pl. iv, fig. 13, *S. confecta*, Grignon, p. 9, pl. iii, fig. 2, *S. coralliophila*, Sassello, p. 9, pl. i, fig. 6, *S. fucosa*, Loire et Cher, p. 13, pl. iv, fig. 14, *S. herpestica*, p. 15, pl. ii, fig. 15, *S. remiorum*, p. 18, pl. iv, fig. 25, *S. sabatia*, Savona, p. 19, pl. iii, fig. 5, *S. supernecta*, p. 21, pl. iv, fig. 22, *S. (Pomatocerus) complicata*, p. 37, pl. iv, fig. 24, *S. saccoi*, p. 38, pl. i, fig. 1, *S. vivida*, p. 39, pl. iv, fig. 18, ROVERETO, Pal. Ital. x, **n. spp.**
- Spermosyllis torulosa*, Cette, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii, p. 342, fig. 6.
- Spherosyllis hystrix*, Cette, anatomy, SOULIER, t. c. p. 325, figg. 2 & 3.
- Spio aequalis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 40, pl. v, figg. 18-21, pl. vi, figg. 1-4, **n. sp.**
- +*Spirorbis calvertensis*, Maryland, MARTIN, Maryland geol. Surv. 1904, p. 430, pl. cxviii, figg. 18, **n. sp.**; *S. argutus*, p. 175, figg. a, b, *S. foraminosus*, p. 176, figg. b, c, d, e, *S. bellulus*, p. 177, figg. f, g, h, *S. dorsatus*, p. 178, Japan, MOORE & BUSCH, P. Ac. Philad. lvi; +*S. catagraphus*, p. 53, pl. iv, fig. 2, *S. lovisatoi*, p. 60, fig. 1, *S. revianii*, p. 60, fig. 1 a & b, ROVERETO, Pal. Ital. x, **n. spp.**
- Stauronereis n. n.* (= *Anisoceras* Gr.), for *S. melanops*, p. 648, *S. erythrope*, p. 649, *S. polydonta*, p. 650, Bermudas, VERRILL, Tr. Connect. Ac., **n. spp.**
- Sthenelais semitecta*, New Zealand, anatomy, EHLERS, Abh. Ges. Gotting. iii, p. 10, pl. i, figg. 10-12, pl. ii, figg. 1-4, **n. sp.**
- S. setosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 666, **n. sp.**
- Streblosoma (n. subgen. Eugrymæa) polybranchia n. sp.*, Bermudas, VERRILL, t. c. p. 662.
- Syllis clasterobranchia*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 19, pl. iii, figg. 1-4; *S. gracilis*, p. 349, fig. 8, *S. cornuta*, p. 357, fig. 9, Cette, synonymy, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii.
- S. (Typosyllis) corallicola*, p. 603, *S. grandigularis*, p. 604, *S. (Typosyllis) catenula*, p. 604, *S. jugularis*, p. 606, *S. (Typosyllis) diplomorpha*, p. 606, *S. annularis*, p. 608, *S. cincinnata*, p. 609, *S. exigua*, p. 611, *S. (Ehlersia) nitida*, p. 612, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Terebella (Schmardanella) californica*, California, structure, MOORE, P. Ac. Philad. lvi, pp. 496-401, pl. xxxviii, figg. 36 & 37, **n. sp.**
- Tomopteris*, oocyte, WALLACE, Rep. Brit. Ass. 1903-1904, pp. 282-288.
- Trypanosyllis attenuata*, p. 615, *T. fertilis*, p. 616, *T. tenella*, p. 617, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Vermilia ctenophora*, p. 169, pl. xii, figg. 21-25, *V. pluriannulata*, p. 171, pl. xi, fig. 19, pl. xii, figg. 26-32, 45, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, **n. spp.**

OLIGOCHÆTA.

[The following memoirs relate to *Oligochaeta*:—APATHY (11), BORTOLLOTTI (37), BOVARD (39), BRETSCHER (51, 52), CAJAL (63), CAULLERY & MESNIL (78), COGNETTI (92-99), DITLEVSEN (126), ENTZ (132), FAUVEL (139), GOLDSCHMIDT (166), GUNGL (176), HANEL (185), HARPER (186), HOLMGREN (201), HUBBRECHT (203), ISSEL (209), KORSCHOLT (235), MALAQUIN (290), MICHAELSEN (306, 307), MOREIRA (318), MORGAN (321), NUSBAUM (338), PIERANTONI (351), RAYMOND & FULLER (365), REEKER (366), ROSA (377, 378, 379), SANDOR (394), SCHNEE (401), SMITH & BARRETT (422), THEOBALD (445), TRUMBULL (451), UDE (452), VERRILL (461).]

GENERAL BIOLOGY.

- Morphology : head, as metamere, MALAQUIN (290).
 Anatomy and histology of the blood system, GUNGL (176).
 Blood flow in *Diplocardia Communis*, SMITH & BARRETT (422).
 On the existence of a tubular apparatus in the nervous tissue of the earthworm, CAJAL (63).
 Psychology, HANEL (185).
 Distribution of sense organs in *Microscolex elegans*, BOVARD (39).
 Affinities and systematic relationships, HUBRECHT (203).
Actinomyxideæ as parasites of *Tubificidæ*, CAULLERY & MESNIL (78).
 Variation and correlation, *Lumbricus*, dimensions and number of somites, RAYMOND & FULLER (365).
 Roots of garden plants damaged by *Enchytræus* worms, at Nottingham, THEOBALD (445).
 Regeneration in *Enchytræidæ*, NUSBAUM (338).
 Regeneration, MORGAN (321).
 Regulation in *Stylaria lacustris*, HARPER (186).
 Double formations in *Lumbricidæ*, KORSCHULT (285).
 Development of earthworms, REEKER (366).
 Faunistic, ENTZ (132).

DISTRIBUTION.

- Geographical distribution, UDE (452).
 Ireland, *Allolobophora cyanea*, TRUMBULL (451).
 Switzerland, fauna, localities, lists, BRETSCHER (51).
 Switzerland, n. spp., BRETSCHER (52).
 Italy, n. spp., COGNETTI (92, 94).
 Italy, n. sp., *Allolobophora*, ROSA (379).
 Bologna, earthworms, BORTOLOTTI (37).
 Gulf of Naples, n. spp., PIERANTONI (351).
 Modena, n. sp., *Allolobophora*, ROSA (379).
 Modena, n. spp., ISSEL (209).
 Modena, cave forms, n. spp., COGNETTI (99).
 Ecuador, n. spp., COGNETTI (96).
 Costa Rica, n. spp., COGNETTI (93, 97).
 Brazil, lists of spp. with characters [no plates], MOREIRA (318).
 Chili, n. sp., COGNETTI (98).
 Patagonia, n. sp., ROSA (377).
 Bermudas, VERRILL (461).
 Ceylon, n. spp., MICHAELSEN (307).
 Ceylon, Earthworms, *Spolia Zeylan.* i, 4, pp. 113 & 114.
 Central Ceylon, n. sp., MICHAELSEN (307).

SYSTEMATIC.

- Oligochata* of Ceylon, *Spolia Zeylan.* i, 4, pp. 113 & 114.
Allolobophora cyanea, Ireland, TRUMBULL, Irish Natural. xiii, p. 155 ;
A. subrubricunda, *A. terrestris*, *A. trapezoides*, double formations,
 KORSCHULT, Zool. Jahrb. Suppl. vii, 1904, pp. 257-300, 2 pls.
A. spelæa, Italy, anatomy, ROSA, Atti Soc. Modena (4) iv, 35, pp. 36-39 ;
A. (Eophila) nematogena, Modena, anatomy, ROSA, op. cit. (4) v, 36,
 p. 11 : n. spp.
Andiodrilus biolleyi, Costa Rica, COGNETTI, Boll. Mus. Torino xix, No. 462,
 p. 4, n. sp.

- Aptodrilus* n. gen. for *A. excelsus*, *A. festæ*, *A. ruvidus*, n. spp., Ecuador, COGNETTI, t. c. No. 474, p. 16, n. spp.
- Bryodrilus sulphureus*, Switzerland, BRETSCHER, Rev. Suisse Zool. xii, p. 262, n. sp.
- Criodrilus alfari*, Costa Rica, COGNETTI, Boll. Mus. Torino, No. 478, p. 4, n. sp.
- Dichogaster saliens*, p. 13, fig. 5, *D. parva*, p. 15, Ceylon, MICHAELSEN, SB. Bohmisch. Ges. 1903, xl.
- D. hilaris*, Costa Rica, COGNETTI, Boll. Mus. Torino xix, No. 462, p. 2; *D. andina*, Ecuador, COGNETTI, t. c. No. 474, p. 4 : n. spp.
- Diplocardia communis*, Illinois, blood flow and vascular system, SMITH & BARRETT, Science xix, p. 216.
- Diporochæta profuga*, Ecuador, COGNETTI, Boll. Mus. Torino xix, No. 474, p. 4, n. sp.
- Eisenia fetida*, Bermudas, VERRILL, Tr. Connect. Ac. xi (2), p. 846, fig. 236.
- Enchytræidæ* damaging roots of garden plants, THEOBALD, 2nd Rep. Econ. Zool. 1904, p. 152; *Enchytræidæ* of Switzerland, BRETSCHER, Biol. Centrbl. xxiv, pp. 501-513.
- Eremodrilus chilensis*, Chili, COGNETTI, Bull. Mus. Torino xix, No. 481, 2 pp., n. sp.
- Eutrigaster* n. gen. for *E. orædivitis* n. sp., Costa Rica, COGNETTI, t. c. No. 478, p. 2.
- Fridericia ratzelii*, regeneration, NUSBAUM, Arch. polon. ii, 3, pp. 233-258, figg. 2-13.
- F. cognetti*, *F. bedoti*, Switzerland, BRETSCHER, Rev. Suisse Zool. xii, pp. 264-266; *F. paroniana*, *F. viridula*, Modena, anatomy, ISSEL, Atti Soc. Ligustica xv, i, p. 31, figg. 1-8 : n. spp.
- Glossoscolex excelsus*, *G. perrieri*, also n. subsp. *meridionalis*, Ecuador, COGNETTI, Boll. Mus. Torino xix, No. 474, pp. 16 & 17, n. spp.
- Helodrilus* (*Allolobophora*) *virei* n. sp., COGNETTI, Atti Soc. Modena (4) v, 36, p. 5; *H. (Allolobophora) longus* n. subsp. *occulta*, Italy, COGNETTI, Boll. Mus. Torino xix, No. 466, p. 2; *H. (Eophila) alzonæ*, Italy, COGNETTI, t. c. No. 459, p. 2; *H. (Allolobophora) borellii*, p. 2, *H. paradoxus*, p. 3, *H. gavarnicus*, p. 5, *H. doderi*, p. 6, *H. pyrenaicus*, p. 7, *H. sardonicus*, p. 9, Pyrenees, COGNETTI, t. c. No. 476; *H. (Allolobophora) lutens*, anatomy, COGNETTI, Atti Soc. Modena (4) v, 36, p. 7 : n. spp.
- Henlea leptodera*, regeneration, NUSBAUM, Arch. polon. ii, 3, pp. 233-258, figg. 1, 3-11, 14.
- Holoscolex* n. gen. for *H. nemorosus* n. sp., Ecuador, COGNETTI, Boll. Mus. Torino, No. 474, p. 17.
- Hyodrilus palustris*, *H. filiformis*, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, p. 408, fig. 1-5, n. spp.
- Limnodriloides* n. gen. for *L. appendiculatus*, p. 187, fig. 1, *L. roseus*, p. 188, fig. 2, *L. pectinatus*, p. 190, fig. 3, n. spp., Gulf of Naples, PIERANTONI, Boll. Soc. Napoli (1) xvii.
- Lumbricidæ*, structure of blood system, GUNGL, Arb. Inst. Wien xv, 2, pp. 155-183, 1 pl.; *Lumbricidæ* of Bologna, classification, BORTOLOTTI, Boll. Naturalista xxiv, pp. 16-18.
- Lumbriculus*, regeneration, MORGAN, Science xx, pp. 742-748.
- Lumbricus*, on the existence of a tubular apparatus in the nervous tissue, CAJAL, Bol. Soc. espan. iii, pp. 395-398, 2 figg.; *Lumbricus*, SÁNDOR, Allatt. Kozl. Magyar Tars. i, 1902, p. 107, fig. 5; *L. rubellus*, APÁTHY, op. cit. iii, 1904, 1, pp. 76-82, 6 figg.; *L. friendi* n. n. for *L. papillosus* Friend, COGNETTI, Boll. Mus. Torino xix, No. 476, p. 10.
- Marionina volkarti*, Switzerland, BRETSCHER, Rev. Suisse Zool. xii, p. 262, n. sp.

- Mesenchytræus parvus*, anatomy, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, p. 440, figg. 46-48, n. sp.
- Microscolex elegans*, distribution of sense organs, BOVARD, Univ. Calif. publ. Zool. i, pp. 269-286, pl. xxiv-xxv.
- Monopylephorus trichochaetus*, *M. parvus*, p. 427, figg. 21-26, anatomy, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, n. spp.
- Nais eliguis*, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 516, fig. 82.
- Nematogenia josephina*, Costa Rica, COGNETTI, Boll. Mus. Torino, No. 478, p. 3, n. sp.
- Notiodrilus georgianus* var. n. *lavis*, Buenos Ayres, ROSA, Atti Soc. Modena (4) iv, 35, p. 9.
- N. silvestrii*, Rio Santa Cruz, anatomy, ROSA, t. c. p. 7, n. sp.
- Ocnerodrilus (Ilyogenia) simplex*, Costa Rica, COGNETTI, Boll. Mus. Torino, No. 478, p. 3, n. sp.
- Pachydriulus claparèdeanus*, anatomy, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, p. 431, fig. 28, n. sp.
- Perionyx ceylanensis*, Ceylon, detailed anatomy, MICHAELSEN, SB. Bohmisch. Ges. 1903, xl, pp. 6-11, 2 figg, n. sp.
- Plutellus uzeli*, Peradeniya, Ceylon, in *Notoscolex*, MICHAELSEN, t. c. p. 4, 3 fig., n. sp.
- Psammoryctes illustris*, *P. fossor*, pp. 416-419, fig. 15-20, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, n. spp.
- Stylaria lacustris*, regulation, HARPER, Biol. Bull. vi, pp. 173-190, 16 figg.
- Thamnodrilus benhami*, p. 6, *T. ophioides*, p. 6, *T. nemoralis*, p. 7, *T. micrurus*, p. 8, *T. beddardi*, p. 8, *T. tuberculata*, p. 9, *T. magnus*, p. 10, *T. acanthinurus*, p. 10, *T. agricola*, p. 11, *T. validus*, p. 12, *T. gravis*, p. 12, *T. tutus*, p. 13, *T. rigeophilus*, p. 13, *T. euzonus*, p. 14, *T. agilis*, p. 14, Ecuador, COGNETTI, Boll. Mus. Torino xix, No. 474, n. spp.
- Trichodriloides* n. gen. for *T. intermedius* n. sp., Orne, FAUVEL, C.R. Ass. Franc. xxxii 1, p. 221.
- Trinephrus kræpelini*, Central Ceylon, anatomy, MICHAELSEN, Mt. Mus. Hamburg xxi, p. 128, 1 fig., n. sp.
- Tubificæ* parasitised by *Actinomyxide*, CAULLERY & MESNIL, C.R. Soc. Biol. lvi, pp. 408-410; *Tubifex*, parasites of, LÉGER, C.R. Soc. Biol. lvi, pp. 844-846, 4 figg.; *Tubifex*, Marschall Island, SCHNEE, Zool. Jahrb. Syst. xx, pp. 387-412; *T. tubifex*, parasitised, LÉGER, C.R. Soc. Biol. lvi, pp. 846-848.
- T. marinus*, p. 421, fig. 9 & 10, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, n. sp.

HIRUDINEA.

[The following memoirs relate to *Hirudinea*:—APATHY (11), ARNESEN (13), AZOULAY (16), BILLET (25), BRUMPT (55), FAGE (134), HEMINGWAY (191), HOLMGREN (201), KERSHAW (230), LIVANOW (270), NOBRE (333, 334), PÉREZ & GENDRE (348, 349), SCHARFF (396), SCHUBERG (407), SCHUBERG & SCHRÖDER (406), SCRIBAN (414), SPIESS (434, 435), YAKHONTOV (478).]

GENERAL BIOLOGY.

Morphology, LIVANOW (270).

Anatomy and histology of the digestive organs of *Aulostoma*, SPIESS (434).

Histology of digestive epithelium in *Hæmopsis sanguisuga*, SPIESS (435).

Muscle fibres of *Branchellion*, PÉREZ & GENDRE (349).

- Histology of cylindrical epithelial cells, HOLMGREN (201).
 Histology of brain and nerve cord of *Placobdella pediculata*, HEMINGWAY (191).
 Histology of nerve fibres in the digestive tube of the leech, AZOULAY (16).
 Histology of the blood system of the *Rhynchobdellidæ*, ARNESEN (13).
 Three forms of light cells, APÁTHY (11).
 Leech as a sight restorer, CLARKE (86).
 Ergastoplasmic functions, nephridia, *Hirudo*, FAGE (134).
 Ovogenesis of *Branchellion*, PÉREZ & GENDRE (348).
 Gregarines parasitising *Hirudinea*, BRUMPT (55).

DISTRIBUTION.

- Lake Baical, list of spp. found, YAKHONTOV (478).
 Sligo, freshwater leeches, SCHARFF (396).
 Roumania, Hirudinidæ; SCRIBAN (44).
 North and South Portugal, marine fauna, NOBRE (333, 334).
 Constantine, Algeria, a Trypanosome in *Helobdella algira*, BILLET (25).
 Victoria, a freshwater leech, KERSHAW (230).

SYSTEMATIC.

- Leech, structure of nerve fibres in the digestive canal, AZOULAY, C.R. Soc. Biol. lvi, pp. 465-468, 2 figg.
Aulostoma gulo, anatomy and histology of digestive organs, SPIESS, Rev. Suisse Zool. xii, pp. 585-647, pls. x & xi.
Branchellion torpedinis, muscle fibres, PÉREZ & GENDRE, C.R. Soc. Biol. lvii, pp. 113-115; ovogenesis, PÉREZ & GENDRE, t. c. pp. 605 & 606.
Clepsine striata to *Glossosiphonia*, characters, SCRIBAN, Ann. Univ. Jassy iii, p. 18.
Hæmopsis sanguisuga, histology of digestive epithelium, SPIESS, C.R. Soc. Biol. lvi, pp. 698 & 699; *H. sanguisuga*, parasitised by Gregarines, BRUMPT, op. cit. lvii, pp. 165-167.
Helobdella algira, at Constantine, parasitised by a Trypanosome, BILLET, C.R. Ac. Sci. cxxxix, 2, pp. 574-576.
Hemiclepsis marginata, parasitised by Gregarines, BRUMPT, C.R. Soc. Biol. lvii, pp. 165-167.
Hirudo medicinalis, cylindrical epithelial cells, HOLMGREN, Arch. mikr. Anat. lxxv, 2, pp. 280-297, pls. xviii & xix, 5 figg.; morphology, LIVANOW, Zool. Jahrb. Anat. xix, pp. 29-91, xx, pp. 153-226, pls. ii-vi, ix-xi.
Limnobdella quinquestriata, Victoria, freshwater form, KERSHAW, Victorian Natural. xx, 9, Zoology, pp. 122-125.
Nephele vulgaris (= *Herpobdella atomaria* Carena), parasitised by a new Nematode, SCHUBERG, Verh. Ver. Heidelb. vii, pp. 629-632.
Placobdella catenigera, parasitised by Gregarines, BRUMPT, C.R. Soc. Biol. lvii, pp. 165-167; *P. pediculata*, brain and nerve cord, HEMINGWAY, Science xix, p. 218.
Protoclepsis tessellata, morphology, LIVANOW, Zool. Jahrb. Anat. xix, pp. 29-91, xx, pp. 153-226, pls. ii-vi, ix-xi.
Rhynchobdellidæ, histology of the blood system, ARNESEN, Jena. Zeitschr. xxxviii, 4, pp. 771-806, pls. xxvi-xxviii.

PLATYHELMINTHES.

NEMERTINEA.

[The following memoirs relate to *Nemertinea*:—BERGENDAL (24), BURGER (61), JOUBIN (223), RETZIUS (371), VERRILL (459), WILSON (471), YATSU (479).]

GENERAL BIOLOGY.

Monograph, BURGER (61).
Structure of *Carinoma oudemans*, BERGENDAL (24).
Experiments on the development of egg fragments in *Cerebratulus*, YATSU (479).]

DISTRIBUTION.

Azores, n. sp., JOUBIN (223).

SYSTEMATIC.

Nemertini, monograph, BURGER, Tierreich xx, 1904, 151 pp., 15 figg.
Carinoma oudemans, *C. armandi*, structure, BERGENDAL, Acta Univ. Lund. xxxix, 86 pp., 2 pls., 25 text-figg.
Cerebratulus lacteus, experiments on the development of egg-fragments, YATSU, Biol. Bull. vi, pp. 123-136, 5 figg.
Lineus albocinctus, *L. albonasus*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 598, pl. lxx, figg. 1 & 2, n. spp.
Malacobdella grossa, male reproductive organs, RETZIUS, Biol. Untersuch. xi, p. 12, pl. iv, figg. 20-27.
Nectonemertes grimaldii, Azores, JOUBIN, Bull. Mus. Monaco 1904, No. 20, 6 pp., 2 figg., n. sp.
Taniosoma curtum, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 597, pl. lxx, fig. 3.

TURBELLARIA.

[The following memoirs relate to *Turbellaria*:—BOHN (31, 32), BRESSLAU (50), CHILD (84), ENTZ (132), GIARD (161), GRAFF (170), HUBRECHT (204), KEEBLE (228), KERSHAW (230), KOROTNEFF (234), LAIDLAW (241), LUTHER (284), MARKOW (293), MARPMANN (295), MATTIESEN (299), MELL (303, 304), MORGAN (319-322), MORGAN & SCHIEDT (323), MRÁZEK (325), NELSON (328, 329), NEPPI (330), SABUSSOW (388), SÁNDOR GORKA (394), SCHULTZ (408, 409), STEVENS (437), VERRILL (459), WEIGELT (466), YAKHONTOV (478).]

GENERAL BIOLOGY.

Monograph on the *Eumesostomida*, LUTHER (284).
Histology of Planarians, MARPMANN (295).
Movements, BOHN (31, 32).
Appearance of hunger in *Planaria lactea*, SCHULTZ (408).
Regeneration in *Planaria lugubris*, SCHULTZ (409).
Regeneration, MORGAN (319).
Regeneration in *Phagocata gracilis*, MORGAN & SCHIEDT (323).

- Form-regulation, CHILD (84).
 Control of heteromorphosis in *Planaria maculata*, MORGAN (320).
 Polarity and axial heteromorphosis in *Planaria* spp., MORGAN (322).
 Spermatogenesis and embryology of *Planaria simplicissima*, STEVENS (437).
 Cell-lineage and early development of *Dinophilus*, NELSON (329).
 Early development of *Dinophilus* as compared with that of Annelids, NELSON (328).
 Embryology of Dendrocoelea, MATTIESSEN (299).
 Development of Rhabdocoele, BRESSLAU (50).
 Fauna of salt water, continental, ENTZ (132).
 Bionomics of *Convoluta roscoffensis*, and its green cells, KEEBLE (228).
 Affinities and systematic position, HUBRECHT (204).

DISTRIBUTION.

- Lake Baical, collections, KOROTNEFF (234).
 Lake Baical, n. spp., SABUSSOW (388).
 Lake Baical, spp. found, YAKHONTOV (478).
 Kharkow and Poltava, n. spp., MARKOW (293).
 Pas-de-Calais, faunistic, GIARD (161).
 Montenegro, n. sp., MRÁZEK (325).
 European Coasts and Orotava, n. spp., marine forms, GRAFF (170).
 North East Africa, n. spp., MELL (303).
 East Africa, n. spp., NEPPI (330).
 Madagascar, n. spp., MELL (304).
 Thursday Island, n. sp., LAIDLAW (241).
 Bermudas, n. spp., VERRILL (459).
 Victoria, 5 land Planarians, KERSHAW (230).
 New Zealand, n. spp., NEPPI (330).

SYSTEMATIC.

- Amblyplana nigrescens*, p. 472, figg. 1-3, *A. aberana*, p. 476, figg. 4-8, *A. neumanni*, p. 480, figg. 9-12, North East Africa, anatomy, MELL, Zool. Jahrb. Syst. xx; *A. kükenhali*, Madagascar, MELL, Abh. Senckenb. Ges. xxvii, 2, p. 224, pl. xxx, figg. 13-16: n. spp.
Amphichærus virescens, *A. langerhansi*, pp. 231 & 232, pl. xi, figg. 1-10, 21-23, pl. xii, figg. 1-13, GRAFF, Zeitschr. wiss. Zool. lxxviii.
Aphanostoma rhomboides, anatomy, GRAFF, t. c. p. 219, pl. xi, figg. 11-20.
Bipalium woodworthi, p. 209, pl. xxxi, fig. 4, *B. voighti*, p. 212, pl. xxxii, fig. 5, *B. kelleri*, p. 213, pl. xxx, figg. 1 & 2, pl. xxxii, fig. 6, *B. ferrugineum*, p. 216, pl. xxxii, fig. 7, anatomy, MELL, Abh. Senckenb. Ges. xxvii, 2.
B. tau, p. 218, pl. xxx, figg. 3-6, *B. brauni*, p. 219, figg. 7 & 8, *B. grandidieri*, p. 220, figg. 9 & 10, *B. marenzelleri*, p. 222, figg. 11 & 12, Madagascar, anatomy, MELL, t. c. n. spp.
Bothrostoma essenii, p. 249, figg., *B. personatum*, p. 253, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii; *B. personatum*, p. 44, fig. 40, MARKOW, Trudui Kharkov. Univ. xxxix.
Castrada segne, p. 177, figg., *C. cuenoti*, p. 186, figg., *C. neocomiensis*, p. 192, figg., *C. hofmanni*, p. 196, figg., *C. viridis*, p. 205, pl. viii, fig. 2, *C. intermedia*, p. 209, fig. 7, *C. armata*, p. 212, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii; *C. radiata*, *C. chlorea*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, pp. 46 & 47, figg. 42 & 43.
C. stagnorum, p. 183, figg., *C. sphagnetorum*, p. 202, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii, n. spp.
Cestoplana, form-regulation, CHILD, Smithson. Collect. xlv, pp. 134-143.

- Cicerina tetradactyla*, Pas-de-Calais, River Ambleteuse, GIARD, Microgr. prep. xii, 3, p. 107, fig. 1.
- Cæloplana*, affinities, HUBRECHT, Jena. Zeitschr. xxxix, 1, pp. 151-176.
- Convoluted roscoffensis*, movements of, BOHN, Bull. Mus. Paris 1903, pp. 352-364, 4 figg., 397-399; *C. schultzei*, GORKA, Allatt. Kozl. Magyar Tars. i, 1902, p. 106, fig. 4; *C. roscoffensis*, bionomics, green cells, KEEBLE, Rep. Brit. Ass. 1903-1904, p. 691; *C. sordida*, *C. hipparchia*, pp. 227 & 228, pl. xiii, figg. 21-29, GRAFF, Zeitschr. wiss. Zool. lxxviii.
- C. uljanini*, p. 223, pl. xiii, figg. 18-20, *C. confusa*, p. 225, figg. 1-7, Orotava, GRAFF, t. c. n. spp.
- Ctenoplana*, affinities, HUBRECHT, Jena. Zeitschr. xxxix, 1, pp. 151-176.
- Dendrocelida*, embryology, MATTIENSEN, Zeitschr. wiss. Zool. lxxvii, pp. 274-361, pls. x-xiii.
- Dendrocalum lacteum*, regeneration, MORGAN, Biol. Bull. vi, pp. 159-172.
- Derostoma unipunctata*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 60, fig. 56.
- Dinophilus*, early development as compared with that of Annelids, NELSON, Amer. Natural. xxxviii, p. 500; early development and cell-lineage, NELSON, P. Ac. Philad. lvi, 3, pp. 687-737, pls. xliii-xlviii, 4 charts, 6 figg.
- Discocelis binocularis*, *D. cyclops*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), pp. 43 & 44, pl. v, figg. 1, 3 & 4, n. spp.
- Dolichoplana voeltzkowi*, Madagascar, anatomy, MELL, Abh. Senckenb. Ges. xxvii, 2, p. 224, pl. xxxv, figg. 8-11.
- Gyrator notops*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 49, fig. 45.
- Leptoplana tremellaris*, form-regulation, CHILD, Smithsonian. Collect. xlv, pp. 134-143; *L. lactoalba* n. var. *tincta*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 46, pl. v, fig. 8.
- L. lactoalba*, Bermudas, VERRILL, op. cit. x (2), p. 595, fig. 9; *L. australis*, Port Phillip, LAIDLAW, Mem. Manchester Soc. xlviii, No. 15, p. 3, n. sp.
- Mesostoma viridatum*, *M. lanceola*, *M. punctatum*, *M. rostratum*, *M. lingua*, *M. productum*, *M. ehrenbergi*, *M. craci*, Kharkov, MARKOW, Trudui Kharkov. Univ. xxxix, pp. 34-44, figg. 30-39; *M. productum*, p. 218, *M. lingua*, p. 222, *M. ehrenbergi*, p. 227, *M. mutabile*, p. 235, *M. craci*, p. 241, *M. tetragonum*, p. 244, many figures, LUTHER, Zeitschr. wiss. Zool. lxxvii.
- M. lacteum*, East Africa, NEPPI, Zool. Jahrb. Syst. xxi, p. 303, pl. ix, figg. 1-6, n. sp.
- Opistoma schultzeanum*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 61, fig. 57.
- Otocelis rubropunctata*, anatomy, GRAFF, Zeitschr. wiss. Zool. lxxviii, p. 216, pl. xiii, figg. 8-17.
- Pelmatoplana mahéensis*, p. 194, pl. xxxi, fig. 1 and text-figg. 1 & 2, *P. braueri*, p. 202, fig. 2, Madagascar, structure, MELL, Abh. Senckenb. Ges. xxvii, 2.
- Perocephalus ravenalei*, Madagascar, anatomy and histology, MELL, t. c. p. 205, pl. xxxi, fig. 3, text-fig. 3.
- Phagocata gracilis*, regeneration experiments, MORGAN & SCHIEDT, Biol. Bull. vii, pp. 160-165; regeneration, MORGAN, Biol. Bull. vi, pp. 159-172.
- Planaria lactea*, fig. 60-64, *P. polychora*, p. 67, fig. 63, MARKOW, Trudui Kharkov. Univ. xxxix, 1; *P. lactea*, reductions, SCHULTZ, Arch. Entwicklmech. xviii, pp. 555-577, pl. xxxiv; *P. lugubris*, *P. maculata*, polarity and axial heteromorphosis, MORGAN, Amer. Natural. xxxviii, pp. 502-505; *P. lugubris*, regeneration, SCHULTZ, Biol. Centrbl. xxiv, pp. 310-317; *P. maculata*, control of heteromorphosis, MORGAN,

- Arch. Entwickmech. xvii, pp. 683-695, 1 fig.; *P. maculata*, regeneration, MORGAN, Biol. Bull. vi, pp. 159-172; *P. angarensis*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, 6, p. 26, fig. 12; *P. simplissima*, spermatogenesis and embryology, STEVENS, P. Ac. Philad. lvi, 1, pp. 208-220, pls. xiii-xvi, 5 text-figg.; *P. torva*, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 514, fig. 79.
- P. armata*, p. 28, fig. 13, *P. sibirica*, p. 30, fig. 14, *P. grubii*, p. 31, fig. 15, *P. dybowski*, p. 33, fig. 16, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi; *P. montenigrina*, Montenegro, MRÁZEK, SB. Bohmisch. Ges. 1903, xxxiii, 43 pp., 2 pls.; *P. neumanni*, East Africa, *P. schauinslandi*, New Zealand, pp. 309-324, pl. ix, figg. 7-12, pl. x, figg. 13-16, NEPPI, Zool. Jahrb. Syst. xxi : n. spp.
- Planocera graffi*, GORKA, Allatt. Kozl. Magyar Tars. i, 1902, p. 105, fig. 3. *Platydemus montanus*, North East Africa, MELL, Zool. Jahrb. Syst. xx, p. 484, figg. 13-18, n. sp.
- Procotyla baicalensis*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, p. 23, fig. 11, n. sp.
- Proporus venosus*, Sebastopol, GRAFF, Zeitschr. wiss. Zool. lxxviii, p. 215, pl. xiii, figg. 30 & 31.
- Pseudoceros superbus*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 596, pl. lxx, fig. 5.
- P. bicolor*, *P. aureolineata*, Bermudas, VERRILL, op. cit. xi (1), p. 42, pl. v, figg. 5 & 6; *P. pardalis*, Bermudas, VERRILL, op. cit. x (2), p. 596, pl. lxx, fig. 6 : n. spp.
- Rhynchomesostoma* n. gen. for *R. rostratum* (= *Fasciola* Müller), LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 158, figg.
- Rimacephalus punctatus*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, p. 5, n. sp.
- Sorocelis nigrofasciata*, p. 7, figg. 1 & 2, *S. hepatizon*, p. 9, fig. 3, *S. tigrina*, p. 11, fig. 4, *S. guttata*, p. 20, figg. 9 & 10, Lake Baical, SABUSSOW, t. c.
- S. fungiformis*, p. 13, fig. 5, *S. lineata*, p. 15, fig. 6, *S. leucocephala*, pp. 17-19, fig. 8, Lake Baical, SABUSSOW, t. c. n. spp.
- Stenostoma caudata*, Kharkow, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 31, fig. 27, n. sp.
- Strongylostoma radiatum*, structure, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 149, pl. iii, figg. 14-27, pl. vii, figg. 4-9, pl. ix, fig. 22.
- Stylochus vigilax*, Thursday Island, LAIDLAW, Mem. Manchester Soc. xlviii, No. 15, p. 2; *S. bermudensis*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 43, n. sp.
- Tetracelis marmorosum*, anatomy, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 166, figg.
- Thysanozoön griseum*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 4, pl. v, fig. 7, n. sp.
- Trigonoporus microps*, Bermudas, VERRILL, t. c. p. 45, pl. v, fig. 2, n. sp.
- Typhloptana minima*, anatomy, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 174, figg.
- Vortex hellus*, p. 52, fig. 48, *V. sexdentatus*, p. 53, fig. 49, *V. pictus*, p. 54, fig. 50, *V. hallezi*, p. 55, fig. 51, *V. millportianus*, p. 56, fig. 52, *V. truncatus*, p. 56, *V. graft*, p. 58, fig. 54, MARKOW, Trudui Kharkov. Univ. xxxix, 1.
- V. kharkowiensis*, MARKOW, t. c. p. 58, n. sp.

CESTODA.

[The following memoirs relate to *Cestoda* :—BARBAGALLA & DRAGO (18), BILLINGHURST (26), DE BUYSSON (62), CARL (71), CHILD (83), COHN (100), CULLINGWORTH & CLUTTON (107), CURTIS (108), DÉVÉ (121, 122, 123), EDEN (129), ENTZ (132), FUHRMANN (149, 151), GALBRAITH (152), GIARD (158), GUCCINI (174), GUIART (175), HALL (183), HERDMAN (193), ISTVÁN RÁTZ (210–212), JAMMES & MANDOU (216), JANICKI (217), KOWALEWSKI (236), KÜNSEMULLER (237), LEON (256), LINSTOW (260–268), MILLER (308), ODHNER (339), PONOMAROFF (353), RANSOM (362), RÁTZ (363), RICCI (372), RIGBY (374), ROSSETER (382), SCHNEIDER (403, 404), SFAMENI (417), SZYMANSKI (439), TEMPÈRE (442), TERRIEN (443), VIGENER (462), WOOD (475), ZSCHOKKE (484).]

GENERAL BIOLOGY.

Anatomy of various forms, LINSTOW (260).
 Amitosis in cells of *Moniezia*, CHILD (83).
 Marsupial parasites, ZSCHOKKE (484).
 Parasites of man and domestic animals, TEMPÈRE (442).
 Fish parasites, SCHNEIDER (404).
 Sub-conjunctival *Cysticercus*, TERRIEN (443).
 Infection of dog by *Dibothriocephalus latus*, RÁTZ (363).
 Chicken tapeworm, RANSOM (362).
 Parasites of higher animals, mode of infection, parts attacked, symptoms; anatomy and biology of parasite, HALL (183).
 Practical demonstrations of parasitology, GUIART (175).
 Domestic cat as final host for *Tenia echinococcus*, DÉVÉ (122).
 Human parasites, BILLINGHURST (26).
 Tracheal *Tenia echinococcus*, DÉVÉ (121).
 Prophylaxis for *Tenia echinococcus*, transmission, hosts, prevention, DÉVÉ (123).
 Origin of pearls, GIARD (158).

DISTRIBUTION.

Russia, n. spp., LINSTOW (267).
 Finland, fish parasites, SCHNEIDER (403).
 Roumania, frequent occurrence of *Bothriocephalus*, LEON (256).
 Hungarian spp., ISTVÁN RÁTZ (211).
 Galicia, n. sp. from *Podiceps auritus*, KOWALEWSKI (236).
 Ticino, fish parasites, GUCCINI (174).
 Sicily, fish parasites, BARBAGALLO & DRAGO (18).
 Caspian Sea, n. sp., LINSTOW (267).
 Nile, n. sp., LINSTOW (267).
 West Africa, n. spp., LINSTOW (264).
 Peru, n. sp., LINSTOW (267).
 Ceylon, pearl formation, HERDMAN (193).
 Singapore, n. sp., LINSTOW (268).
 Australia, mammalian parasites, FUHRMANN (151).

SYSTEMATIC.

Amphilina foliacea, anatomy and histology, HEIN, Zeitschr. wiss. Zool. lxxvi, pp. 400–438, pls. xxv & xxvi; anatomy, COHN, t. c. pp. 367–387, pl. xxiii.

- Anoplocephala plicata*, p. 118, pl. xiii, figg. 1 & 2, *A. perfoliata*, figg. 3 & 4, *A. mamillana*, figg. 5 & 6, in the horse, TEMPÈRE, Microgr. prep. xii, 3.
- Anthobothrium tortum* from *Phoca barbata*, LINSTOW, Centrbl. Bakter. xxxvii, p. 682, figg. 7 & 8, n. sp.
- Aploparaksis fringillarum*, LINSTOW, Arch. Naturg. 1904, i, p. 305, figg. 21 & 22.
- Bertia forcipata*, Peru, from the intestine of *Lagidium peruanum cuvieri*, LINSTOW, Centrbl. Bakter. xxxvii, p. 681, figg. 5 & 6, n. sp.
- Bothriocephalus* in Roumania, LEON, Bull. Soc. Bucarest xiii, pp. 286 & 287; *B. latus*, larva and adult, ISTVÁN RÁTZ, Termes. Kozl. Magyar Tars. 1904, pp. 22-28, 5 figg.; *B. latus*, p. 212, pl. xxi, figg. 1-10, *B. davaine*, p. 213, pl. xxi, figg. 11 & 12, *B. cordatus*, figg. 13 & 14, in man, TEMPÈRE, Microgr. prep. xii, 5; *B. nigropunctatus* in *Sebastes norvegicus*, Murman Coast, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 293, figg. 35 & 36.
- B. ratticola*, Singapore, from *Mus rattus*, LINSTOW, Centrbl. Bakter. xxxvii, p. 862, fig. 9, n. sp.
- Bothriomonus pachycephalus*, structure and affinities, LINSTOW, Arch. Naturg. 1904, i, p. 307, figg. 26-29; *B. nylandicus*, Finland, in *Pleuronectes flesus*, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3, p. 5, fig. 1.
- Bothriotænia rugosa*, Finland, anatomy, SCHNEIDER, t. c. p. 7, fig. 2.
- Cittotænia denticulata*, note on occurrence in rabbit, DU BUYSSON, Rev. Sci. Bourbonnais xvii, p. 130.
- C. quadrata*, Peru, from intestine of *Lagidium peruanum cuvieri*, LINSTOW, Centrbl. Bakter. xxxvii, p. 680, figg. 3 & 4, n. sp.
- Cænurus cerebralis*, Karlsruhe, in cattle, KARL, Mt. Badisch. Zool. Ver. 17, pp. 111-120; *C. cerebralis*, *C. serialis*, anatomy, KUNSEMÜLLER, Inaug. Diss. (Tübingen) Jena 1904, 32 pp., 3 pls.
- Cysticercus bovinus*, experiments, RICCI, Boll. Naturalista xxiv, pp. 85-87; *C. inermis*, Karlsruhe, in cattle, CARL, Mt. Badisch. Zool. Ver. 17, pp. 111-120.
- Davainea echinobothrida* (= *Tænia botrioplites*), *D. tetragona*, in chickens, history, anatomy, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. 60, pp. 55-72, figg. 41-52.
- Dibothriocephalus latus*, mode of infecting the dog, RÁTZ, Centrbl. Bakter. xxxvi, pp. 384-387.
- Dioicocestus aspera*, *D. acotylus*, anatomy of male and female, FUHRMANN, Zool. Jahrb. Syst. xx, pp. 131-150.
- Diorchis parviceps*, anatomy, LINSTOW, Arch. Naturg. 1904, i, p. 306, figg. 23-25.
- Diplocotyle coharens* from *Pleuronectes flesus*, Murman Coast, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 291, figg. 30-34, n. sp.
- Drepanidotænia pachycephala*, LINSTOW, Arch. Naturg. 1904, i, p. 305, figg. 17-20; *D. lanceolata*, *D. setigera*, p. 120, pl. xiii, figg. 10-13, TEMPÈRE, Microgr. prep. xii, 3.
- Echinococcus* in the abdominal cavity of a rabbit, PONOMAROFF, Centrbl. Bakter. xxxiv, p. 623.
- Hymenolepis* sp., a cestode without a genital pore, JANICKI, Centrbl. Bakter. xxxvi, p. 222, 1 fig.; *H. nana*, *H. diminuta*, in man in France, p. 119, pl. xiii, figg. 7-9, TEMPÈRE, Microgr. prep. xii, 3; *H. (Drepanidotænia) clandestina*, COHN, Arch. Naturg. 1904, i, p. 243, figg. 9-12; *H. decipiens*, *H. acuta*, *H. scalaris*, *H. bacillaris*, pp. 302-305, figg. 10-16, LINSTOW, Arch. Naturg. 1904, i.
- H. (Drepanidotænia) podicipina*, from *Podiceps auritus*, SCYMÁNSKI, Bull. Ac. Cracovie 1904, 10, p. 733, pl. xvi, n. sp.
- Ichthyotænia perca*, Finland, anatomy, synonymy, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3, p. 13, figg. 3-8.

- I. skorikowi*, from *Acipenser stellatus*, Caspian Sea, LINSTOW, Annuaire Mus. St. Petersb. ix, p. 18, figg. 4-6; *I. skorikowi*, from *Acipenser stellatus*, LINSTOW, Arch. mikr. Anat. lxi, 3, p. 494, figg. 21 & 22, n. spp.
- Ligula simplicissima*, ENTZ, Termes Kozl. Magyar Tars. 1904, p. 626, 2 figg.; *L. simplicissima*, in *Tinca vulgaris*, anatomy, BARBAGALLO & DRAGO, Atti Acc. Gioen. xvii, No. 3, p. 11.
- Linstowia jheringi*, from *Peramys*, South America, ZSCHOKKE, Centrbl. Bakter. xxxvi, p. 52, 1 pl. n. sp.
- Mesocetoides lineatus*, *M. litteratus*, *M. perlatus*, *M. nigropunctatus*, ISTVÁN RÁTZ, Allatt. Kozl. Magyar Tars. 1904, iii, 2, pp. 116-119.
- Moniezia*, amitosis, CHILB, Anat. Anz. xxv, pp. 545-558, 11 figg.; *M. expansa*, in oxen and sheep, anatomy, TEMPÈRE, Microgr. prep. xii, 1, p. 25, pl. iv, figg. 1-4, *M. benedeni*, p. 26, fig. 5, *M. alba perroncito*, p. 26, fig. 6.
- Physaloptera dispar*, West Africa, from *Erinaceus albigentris*, LINSTOW, Centrbl. Bakter. xxxvi, p. 380, figg. 1 & 2, n. sp.
- Stilesia centripunctata*, Algeria, in sheep, TEMPÈRE, Microgr. prep. xii, 1, p. 27, pl. iv, fig. 11.
- Tenia*, bacterial properties, JAMMES & MANDOU, C.R. Ac. Sci. cxxxix, 2, pp. 329-331; *T. echinococcus*, hosts, transmission, prevention, DÉVÉ, C.R. Soc. Biol. lvii, pp. 261 & 262; *T. echinococcus*, domestic cat as final host, DÉVÉ, t. c. pp. 262-264; *T. echinococcus*, in trachea, DÉVÉ, t. c. pp. 136-138; *T. laticollis* from *Felix lynx*, Russia, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 288, fig. 23; *T. multiformis*, COHN, Arch. Naturg. 1904, i, p. 246, figg. 13-16; *T. sinuosa*, genital organs, ROSSETER, J. Quekett Club ii, No. 55, pp. 81-90, pl. v.; *T. solium* as *Cysticercus cellulosæ*, in tumours, very rare, TERRIEN, C.R. Soc. Biol. lvii, pp. 103-105, 2 figg.; *T. solium*, *T. cœnurus*, *T. crassicolis*, anatomy, VIGENER, Jahrb. nassau. Ver. lvi, pp. 115-177, 8 figg.
- T. voluta*, p. 381, figg. 5 & 6, West Africa, from *Erinaceus albigentris*. *T. (Hymenolepis) voluta*, p. 382, figg. 7-10, from *Anas boschas*, LINSTOW, Centrbl. Bakter. xxxvi; *T. hominis*, from *Homo sapiens*, Aschabad, p. 286, figg. 17-19, *T. hoplites*, from *Ardea*, p. 288, figg. 20-22, *T. dahurica*, from *Corvus dahuricus*, Siberia, p. 290, figg. 24 & 25, *T. retracta*, from *Canis ekloni*, p. 291, figg. 26-29, LINSTOW, Annuaire Mus. St. Petersb. viii, n. spp.
- Tetrabothrius* (= *Tenia* Kreff) *forsteri*, Australia (Port Jackson), in *Delphinus forsteri*, p. 745, figg. 1-5, *T. triangulare*, p. 748, figg. 6-11, FUHRMANN, Centrbl. Bakter. xxxv.
- Tetrarhynchobothrium fluviatile*, Nile, from *Malapterurus electricus*, LINSTOW, Centrbl. Bakter. xxxvii, p. 683, figg. 10 & 11, n. sp.
- Tutria* n. gen. for *T. biremis* n. sp., from *Podiceps auritus*, Galicia, structure, KOWALEWSKI, Bull. Ac. Cracovie 1904, 7, pp. 367-368, pls. ix & x.
- Thysanosoma actinoides* in sheep, United States of America, p. 26, pl. iv, figg. 7 & 8, *T. rivolta* in sheep, p. 26, figg. 9 & 10, TEMPÈRE, Microgr. prep. xii, 1.
- Urogonoporus armatus* Lühe, 1902, the ripe proglottides of *Trilocularia gracilis* Olsson, 1869, systematic position, ODHNER, Arch. parasit. viii, pp. 465-471.

TREMATODA.

[The following memoirs relate to *Trematoda*:—AUDEN (15), BARBAGALLO & DRAGO (18), BILLINGHURST (26), BOUTAN (38), BRIOT (53), COHN (101), CONYNGHAM (104), DYÉ (128), ENTZ (132), FISCHOEDER (141, 142), FUHRMANN (150), GRAHAM (171), GUCCINI (174), GUIART (175), HALL (183), HEIN (189), ISTVÁN RÁTZ (210), JÄGERSKIÖLD (214), JOHNSTON (221), KAMENSKY (225), KATHARINER (227), LANDER (243), LEBOUR (251), LE DANTEC (252),

LINSTOW (260, 267), MACCALLUM (286), MACLAREN (287), MIRANDA RIBEIRO (309), OSBORN (341), PRATT (357), PRENANT (358), RENDALL (370), ROSS (381), RUGE (387), SCHNEIDER (402), SCOTT (412), THEOBALD (444), WORTH (477).]

GENERAL BIOLOGY.

- Anatomy and histology, of several forms, MACLAREN (287).
- Anatomy of n. genera and spp., COHN (101).
- Anatomy of n. spp., PRATT (357).
- Structure and n. sp., ISTVÁN RÁTZ (210).
- Histology of epithelial cells of the intestine of *Distomum hepaticum*, PRENANT (358).
- Fish parasites, SCHNEIDER (402).
- Parasitic Trematode in *Cardium edule*, LEBOUR (251).
- Parasites of higher animals, mode of infection, organs attacked, symptoms; anatomy and biology of parasite, HALL (183).
- Practical demonstrations of parasitology, GUIART (175).
- Parasites of the *Culicidae*, DYÉ (128).
- Parasitic in man, n. sp., CONYNGHAM (104).
- Human parasites, BILLINGHURST (26).
- Anopheles maculipennis* as host to a *Distomum*, RUGE (387).
- Liver fluke in sheep, preventives, THEOBALD (444).
- Bird-living *Distomum*, MIRANDA (309).
- Oyster parasite, GRAHAM (171).
- Origin of pearls, BOUTAN (38).
- Development of *Gyrodactylus elegans*, KATHARINER (227).

DISTRIBUTION.

- Russia, n. spp., LINSTOW (267).
- Boulogne, n. sp. on *Trachinus draco*, BRIOT (53).
- Ticino, fish parasites, GUCCINI (174).
- Sicily, fish parasites, BARBAGALLO & DRAGO (18).
- Red Sea form, anatomy of reproductive organs, JÄGERSKIÖLD (214).
- Natal, a case of *Bilharzia*, LE DANTEC (252).
- Cochin China, n. spp., FISCHÖDER (142).
- Torres Straits, n. sp., LINSTOW (267).
- South America, n. spp., FUHRMANN (150).
- Rio Janeiro, bird parasitised by *Distomum*, MIRANDA RIBEIRO (309).
- Australia, bird parasites, JOHNSTON (221).

SYSTEMATIC.

- Amphistomum watsoni* in man, CONYNGHAM, Brit. Med. J. 1904, ii, p. 663, Lancet 1904, ii, p. 464, n. sp.
- Bilharzia hæmatobia*, notes on, AUDEN, Lancet 1904, i, p. 1235, RENDALL, pp. 755 & 756, WORTH, p. 611, ROSS, p. 687, SCOTT (412); *Bilharzia*, Natal, LE DANTEC, C.R. Soc. Biol. lvii, pp. 399 & 400.
- Bothriogaster* n. gen. for *B. variolaris* n. sp., South America, from the intestine of *Rostrhamus sociabilis*, FUHRMANN, Centrbl. Bakter. xxxvii, p. 59, figg. 1 & 2.
- Cotylaspis insignis*, Lake Chautauqua, New York, habits and structure, OSBORN, Zool. Jahrb. Anat. xxi, 2, pp. 201-242.
- Dicrocoelium lanceolatum* in the dog, KAMENSKY, Trudui Kharkov. Univ. xxxvi, pp. 59-64.
- Diplectanum æguans*, anatomy and histology, MACLAREN, Jena. Zeitschr. xxxviii, 3, pp. 573-618, pls. xx-xxii.

- Distomum* sp. in *Anopheles maculipennis*, RUGE, Centrbl. Bakter. xxxv, p. 258; *Distomum* spp., epithelium, HEIN, Zeitschr. wiss. Zool. lxxvii, pp. 546-585, pls. xxiii-xxv; *D. margaritarum*, causing pearls, BOUTAN, Arch. Zool. exp. Hist. Nat. (4) ii, xxxii, pp. 47-90, pl. iii.; *B. hepaticum*, histology of epithelial cells of the intestine, PRENANT, C.R. Soc. Biol. lvi, pp. 523-525; *D. hepaticum* in sheep, preventives, THEOBALD, 2nd Rep. Econ. Zool. p. 133; *D. lucipetum*, from *Larus maculipennis* MIRANDA, Arch. Mus. Rio Janeiro xii, pp. 137 & 138.
- D. armatissimum* from *Iguana*, Zool. Garden, St. Petersburg, p. 280, fig. 15; *D. reinhardi*, from *Astacus leptodactylus*, Russia, p. 280, fig. 16, LINSTOW, Annuaire Mus. St. Petersb. viii, n. spp.
- Echinostomum garzetta*, at Benakat, in *Garzetta nigripes*, MACCALLUM, Zool. Jahrb. Syst. xx, pp. 541-548, 1 fig.
- E. armatum*, South America, from the intestine of *Rostrhamus sociabilis*, p. 61, fig. 3, *E. inerme*, Java, from the stomach of *Lutra*, p. 63, fig. 4, LINSTOW, Centrbl. Bakter. xxxvii, n. spp.
- Ercocotyle circularis*, from *Acipenser ruthenus*, LINSTOW, Arch. mikr. Anat. lxi, 3, p. 493, figg. 18-20; *E. circularis* from *Acipenser ruthenus*, Saratov, LINSTOW, Annuaire Mus. St. Petersb. ix, p. 17, 1-3 figg., n. spp.
- Eucotyle nephritica* (= *Monostomum* Creplin), COHN, Arch. Naturg. 1904, i, p. 237, fig. 4.
- Hemistomum triangulare* from *Dacelo gigas*, p. 108, figg. 1-6; *H. intermedium* from *Cygnus atratus*, p. 109, figg. 7-10, New South Wales, JOHNSTON, P. Linn. Soc. N. S. Wales xxix, 1, n. spp.
- Hemivrus crenatus*, anatomy, LANDER, Bull. Mus. Harvard xlv, No. 1, pp. 1-27, 4 pls.
- Holostomum hillii*, from *Larus novæ-hollandiæ*, p. 110, pl. vi, figg. 1-8; *H. simplex*, from *Ardea novæ-hollandiæ*, p. 112, pl. vii, figg. 1-3; *H. musculosum*, from *Sterna bergii*, p. 112, pl. vii, figg. 4-9, New South Wales, JOHNSTON, P. Linn. Soc. N. S. Wales xxix, 1, n. spp.
- Gasterostomum* sp., parasitising the oyster, *Bucephalus cuculus*, GRAHAM, Science xix, p. 247.
- Gastrothylax* spp., in new hosts, Cochin China, Annam, Madagascar, FISCHOEDER, Centrbl. Bakter. xxxv, pp. 600 & 601.
- Gyrodactylus elegans*, ENTZ, Termes. Kozl. Magyar Tars. 1904, p. 628, fig.; *G. elegans*, development, KATHARINER, Zool. Jahrb. Suppl. vii, pp. 519-550, pls. xxv-xxviii, 10 figg.
- Microcotyle draconis*, Boulogne, on *Trachinus draco*, BRIOT, C.R. Soc. Biol. lvi, p. 126.
- Nemathobothrium mola*, in flesh of *Orthogoriscus mola*, MACLAREN, Jena. Zeitschr. xxxviii, pp. 593-618, pls. xx-xxii, n. sp.
- Opisthodiscus* n. gen. for *O. diplodiscoides* n. sp., COHN, Arch. Naturg. 1904, i, p. 240, figg. 6-8.
- Opisthotrema pulmonale*, Torres Straits, from the lung of *Halicore australis*, LINSTOW, Centrbl. Bakter. xxxvii, p. 678, figg. 1 & 2, n. sp.
- Opisthorchis tenuicollis*, structure, ISTVÁN RÁTZ, Allatt. Kozl. Magyar Tars. 1903, ii, 2, p. 84, pl. x, fig. 1.
- O. entzi* in *Ardea purpurea*, structure, ISTVÁN RÁTZ, t. c. p. 86, pl. x, fig. 2, n. sp.
- Ostiolium* n. gen. for *O. formosum* n. sp. from a frog, PRATT, Mark Anniv. Vol. 1903, p. 34, figg. 6-8.
- Paramphistomum explanatum*, p. 454, pl. xv, figg. 1-3; *P. epicalitum*, p. 458, figg. 4-6; *P. scolicalium*, p. 463, pl. xvi, figg. 7-11, FISCHOEDER, Zool. Jahrb. Syst. xx.
- P. epicalitum*, *P. scolicalium*, Cochin China, from *Bos bubalus*, FISCHOEDER, Centrbl. Bakter. xxxv, p. 599, n. spp.
- Polystomum integerinum*, ENTZ, Termes. Kozl. Magyar Tars. 1904, p. 627, fig.

- Pronopharynx* n. gen. for *P. nematoides* n. sp., COHN, Arch. Naturg. 1904, i, p. 238, fig. 5.
Renicola pinguis n. gen. for *Monostomum* Creplin, COHN, t. c. p. 232, figg. 2 & 3.
Renifer variabilis (= *Distomum* Leidy), PRATT, Mark Anniv. Vol. 1903, p. 31, fig. 5.
Renifer n. gen. for *R. ellipticus*, *R. elongatus* n. spp., PRATT, t. c. pp. 25-30, figg. 1-5.
Scaphanocephalus expansus (= *Monostomum* Creplin), Red Sea, JÄGERS-KIÖLD, Res. Swed. Zool. Exp. Egypt i, pp. 1-16, 1 pl., 3 figg.
Typhlocalum flavum, COHN, Arch. Naturg. 1904, i, p. 230, fig. 1.

NEMATHELMINTHES.

NEMATODA (incl. GORDIACEA).

[The following memoirs relate to *Nematoda*:—ALESSANDRINI (6), ANNANDALE (10), APÁTHY (11), BANCROFT (17), BARBAGALLO & DRAGO (18), BASTIAN (19, 20, 21), BILLINGHURST (26), BLANCHARD (27, 28), BOYCOTT (42), BRAULT & LOEPER (47), BRUMPT (56, 57), CARAGEAN & MAROTEL (69), CAMERANO (64-68), CASTELLANI & WILLEY (73), CASELLA (72), CHALMERS (81), CONTE & BONNET (103), COSENTINO (105), DADAY (109), DALEAU (112), DYÉ (128), ENTZ (132), GEMMILL (154), GOLDSCHMIDT (167, 168), GUIART (175), HALDANE (180, 181, 182), HALL (183), HUBRECHT (204), JAMMES & MANDOUL (216), JANOWSKY (218), KENNARD (229), LINSTOW (260, 261, 267, 268), LOEB & SMITH (271), LOIR (272), LOOSS (275, 276), LOW (279, 280, 281), MAN (291), MONTICELLI (311), MOSSERI (324), PORTA (354), RAGAZZI (359), RANSOM (362), REMLINGER (369), ROHDE (376), SALA (390), SALMON (391, 392), SCHLEIP (400), SCHNEIDER (402, 404), SCHUBERG (407), SCHUBERG & SCHRÖDER (406), SELOUS (416), STRASSEN (438), TANIGUCHI (441), TRETJAKOFF (449, 450), VERDON (458), WELLMAN (467, 468), WOLTERECK (473), ZIMMERMANN (481).]

GENERAL BIOLOGY.

- Anatomy of various forms, LINSTOW (260).
 Anatomy of *Filaria loa* and *F. diurna*, BRUMPT (57).
 Anatomy of several spp., CAMERANO (64-68).
 Anatomy of male and female *Ichthyonema grayi*, GEMMILL (154).
 Anatomy, occurrence and hosts of *Filaria bancrofti*, TANIGUCHI (441).
 Anatomy of the developing *Ancylostomum duodenale*, LOOSS (276).
 Structure of epithelium of the ovarian and spermatid ducts of *Ascaris*, SALA (390).
 Histology of the ganglion cells in *Ascaris*, GOLDSCHMIDT (168).
 Histology of Nematodes, GOLDSCHMIDT (167).
 Structure of the cell, ROHDE (376).
 Practical demonstrations of parasitology, GUIART (175).
 Parasites of higher animals, organs attacked, mode of infection, symptoms, anatomy and biology of parasite, HALL (183).
 Fish parasites, SCHNEIDER (404).
 New parasite from a pigeon, SALMON (392).
 Arabs infected with *Filaria*, spp., REMLINGER (369).
 Parasites in the eyes of birds, RANSOM (362).
 Parasites of the *Culicidae*, DYÉ (128).
 Human parasites, BILLINGHURST (26).
 Child invaded by *Ascaris lumbricoides* at Budapest, CLARKE (87).

- Mode of infection, KENNARD (229).
 Mode of infection by *Filaria perstans*, BASTIAN (19, 20, 21).
 A leech parasitised by a n. gen. and sp. of Nematode, SCHUBERG (407).
 Tea crops damaged by *Tylenchus* in Java and Ceylon, ZIMMERMANN (481).
 Life-history of *Filaria immitis*, BANCROFT (17).
 Toxicity of *Ascaridæ*, COSENTINO (105).
 Tumours caused in dogs by *Spiroptera*, PORTA (354).
 Ankylostomiasis in Cornish miners, HALDANE (180, 181, 182).
 Diagnosis of *Ankylostoma* infection, BOYCOTT (42).
 Sleeping sickness in Uganda, treatment, CLARKE (85).
 Typhoid fever, rôle of *Trichocephalus*, BLANCHARD (28).
 Early development of *Polygordius*, WOLTERECK (473).
 Glycogen and development of Cestodes and Nematodes, BRAULT & LOEPER (47).
 Spermatogenesis and oogenesis in *Ascaris*, TRETJAKOFF (449, 450).
 Simultaneous occurrence of *Filaria* and malarial parasites in the blood, SELOUS (416).
 Faunistic, ENTZ (132).
 Affinities, and relationships, HUBRECHT (204).

DISTRIBUTION.

- Russia, n. spp., LINSTOW (267).
 Saratov, n. spp., LINSTOW (267).
 Birmingham, infection by Nematodes, CLARKE (88).
 Gulf of Triest, *Polygordius* larvæ, JANOWSKY (218).
 Homberg, epidemic of Trichinosis, SCHLEIF (400).
 Naples, n. gen., STRASSEN (438).
 Sicily, fish parasites, BARBAGALLO & DRAGO (18).
 Africa, cases of human filariasis, BRUMPT (56).
 Fez, case of filariasis, VERDON (458).
 Egypt, plant gall diseases caused by *Heterodera radicola*, MOSSERI (324).
 Congo, sleeping sickness, CLARKE (85).
 Uganda, in a monkey, LOW (281).
 West Central Africa, *Filaria*, n. sp., ?a new *Ascaris*, WELLMAN (468).
 Buluwayo, dog parasitised by *Ascaris canis*, LOIR (272).
 Turkestan, n. spp., DADAY (109).
 North America, n. sp., LINSTOW (267).
 United States, n. sp. in a pigeon, SALMON (392).
 Guatemala, n. sp., CAMERANO (64).
 Patagonia, n. sp., MAN (291).
 Ceylon, n. spp., LINSTOW (268).
 Ceylon, n. sp. in man, CASTELLANI & WILLEY (73).
 Ceylon, man attacked by *Ascaris lumbricoides*, CHALMERS (81).

SYSTEMATIC.

- Angiostoma heliciis*, in *Helix aspersa*, CONTE & BONNET, Ann. Soc. Linn. Lyon 1, pp. 63-68, 11 figg., n. sp.
Angiostomum serpenticola, North America, from the lung of *Heterodon platyrhinus*, LINSTOW, Centrbl. Bakter. xxxvii, p. 678, n. sp.
Ankylostoma causing anæmia in Cornish miners, HALDANE, Tr. Inst. Mining Eng., 6 pp., 8 figg., Rep. Sec. Home Dep. 1903, 13 pp., 1904, 104 pp.; *Ankylostoma* infection, BOYCOTT, Rep. Sec. Home Dep. 1904, 12 pp.; *A. caninum*, LOEB & SMITH, Centrbl. Bakter. xxxvii, pp. 93-98; *A. duodenale*, anatomy, LOOSS, Centrbl. Bakter. xxxv, pp. 752-762;

- A. (Uncinaria) duodenale*, development, ALESSANDRINI, Boll. Soc. zool. Ital. (3) v, pp. 147-166, 3 figg.; *A. duodenale*, parasiting the higher animals, mode of attack, anatomy and biology, HALL, Centrbl. Bakter. xxxv, pp. 145-156.
- Anthraxonema*, n. gen., Naples, STRASSEN, Zool. Jahrb. Suppl. vii, pp. 301-346, pls. xv & xvi, 9 figg.
- Aprocta cylindrica*, *A. orbitalis*, in eyes of birds, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, pp. 40 & 41, fig. 32-34.
- Ascaris*, histology of ganglion cells, GOLDSCHMIDT, Biol. Centrbl. xxiv, pp. 173-182, 2 figg.; *Ascaris*, bacterial properties, JAMMES & MANDOUL (216); *Ascaris* spp., histology, GOLDSCHMIDT, Zool. Jahrb. Anat. xxi, pp. 49-140, pls. iii-viii, 16 figg.; *A. canis*, Buluwayo, in a dog, LOIR, Arch. parasit. vii, p. 483; *A. lumbricoides*, structure of cells in the male and female organs, SALA, Rend. Ist. Lombardo xxxvii, 16, pp. 874-887, 1 pl.; in a child at Budapest, CLARKE, Homeopathic World xxxviii, pp. 475 & 476; in liver and pancreas of man, in Ceylon, CHALMERS, Spolia Zeylan. ii, 5, pp. 47-49, 2 figg.; *A. megalocephala*, var. *univalens*, var. *bivalens*, oogenesis, spermatogenesis, TRETJAKOFF, Arch. mikr. Anat. lxv, 2, pp. 358-383, pl. xxi, pp. 383-438, pls. xxii-xxiv, 1 fig.; *A. mystax*, in man, RAGAZZI, Ann. Med. Navale (9) ii, pp. 509-520.
- A. lunata*, Honduras, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 493, fig. 17; *A. rotundicaudata*, from *Calotes ophiomachus*, p. 92, pl. 1, fig. 1, *A. ceylanica* from *Haliastur indus*, fig. 2, *A. brachyura* from *Calotes versicolor*, p. 93, fig. 3, *A. quadrata* from *Crocodylus porosus*, fig. 4, Ceylon, LINSTOW, Spolia Zeylan. i, 4; *A. centridermichthys* from *Centridermichthys uncinatus*, p. 275, *A. euxina* from *Pelecanus minor*, p. 270, fig. 1, *A. septangularis* from *Aquila nobilis*, p. 271, fig. 2, *A. pallasii* from *Acipenser stellatus*, p. 271, fig. 3, *A. clupei-ponticae* from *Clupea pontica*, p. 275, fig. 4, Russia, LINSTOW, Annuaire Mus. St. Petersb. viii : n. spp.
- Ceratospira vesiculosa*, *C. ophthalmica*, p. 30, figg. 23-25, in eyes of birds, anatomy, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx.
- Chordodes skorikovi*, anatomy, CAMERANO, Boll. Mus. Torino xix, No. 469, 3 pp.
- C. gestri*, Guatemala, CAMERANO, Ann. Mus. Genova (3) i, pp. 93 & 94; *C. betularius*, Caspian Sea, anatomy, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 492, fig. 16 : n. spp.
- Chromadora dubiosa*, Turkestan, DADAY, Zool. Jahrb. Syst. xxi, p. 481, pl. xxvii, figg. 4 & 5, n. sp.
- Otenocephalus* n. gen. for *C. tiara* (= *Ascaris* Linstow) from *Varanus bengalensis*, HORANA, LINSTOW, Spolia Zeylan. i, 4, p. 102, pl. ii, figg. 23-27.
- Cystoopsis acipenseris*, anatomy and affinities, LINSTOW, Arch. Naturg. 1904, i, p. 297, figg. 1-6.
- Filaria*, case in Fez, VERDON, J. trop. Medicine vii, p. 197; *F. bancrofti*, *F. immitis*, *F. perstans*, *F. demarquayi*, parasites of the *Culicidae*, DYÉ, Arch. parasit. ix, pp. 46-57, 4 figg.; *F. bancrofti*, anatomy, occurrence, hosts, TANIGUCHI, Centrbl. Bakter. xxxv, pp. 492-500, 3 figg.; *F. campanulata*, *F. obtuso-caudata*, pp. 34 & 35, figg. 26-30, in eyes of birds, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx; *F. perstans*, connection with genus *Tylenchus*, Low, Lancet 1904, 1, p. 420 & 421, 4 figg., and p. 752; *F. perstans*, probable mode of infection by, and probability that it belongs to genus *Tylenchus*, BASTIAN, t. c. pp. 286 & 287, 1 fig., anatomy, pp. 643-645; *F. perstans*, *F. diurna*, *F. nocturna*, in Africa, in man, BRUMPT, C.R. Soc. Biol. lvi, pp. 758-760; *F. loa*, anatomy, LOOSS, Zool. Jahrb. Syst. xx, pp. 549-574, pl. xix; *F. loa*, *F. diurna*, anatomy, BRUMPT, C.R. Soc. Biol. lvi, pp. 630-632;

- F. medinensis*, *F. loa*, hosts, mode of attack, anatomy and biology, HALL, Centrbl. Bakter. xxxv, pp. 145-156; *F. sanguinis hominis*, *F. loa*, *F. immitis*, in Arabs, REMLINGER, C.R. Soc. Biol. lvii, pp. 76 & 77; *F. immitis*, life-history, BANCROFT, Brit. Med. J. 1904, 1, pp. 822 & 823, 2 figg.
- F. anthicola* from *Anthus richardi*, North China, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 272; *F. blini*, in the aorta of *Buffalus indicus*, CARAGEAN & MAROTEL, Rev. Gen. Med. vet. 1903, viii, pp. 447-454; *F. mansoni*, in man, Ceylon, CASTELLANI & WILLEY, Spolia Zeylan. ii, 6, p. 79; *F. calum*, Cameroon, from *Cephalobus*, p. 299, fig. 8, *F. quiscali* from *Quiscalus versicolor*, LINSTOW, Arch. Naturg. 1904, i, p. 300; *F. rossii*, Uganda, in a monkey, Low, J. trop. Medicine vii, p. 2; *F. vivipara* from *Corvus splendens*, Colombo, LINSTOW, Spolia Zeylan. i, 4, p. 103, **n. spp.**
- Gongylonema ingluvicola* from a pigeon, SALMON, Bull. U. S. Dep. Agric. Animal Ind. lxiv, 3 pp., 2 figg., **n. sp.**
- Gordius cognettii*, anatomy, CAMERANO, Boll. Mus. Torino xix, No. 468, **n. sp.**
- Heterakis vesicularis*, in the dog, DALEAU, Pr.-verb. Soc. Linn. Bordeaux lix, p. lxvii.
- H. trilabium* from *Centropus sinensis*, Horana, p. 97, pl. i, fig. 9, *H. anomala* from *Tropidonotus piscator*, Colombo, p. 97, figg. 10 & 11, LINSTOW, Spolia Zeylan. i, 4, **n. spp.**
- Heterodera radicola*, Egypt, causing plant gall-diseases, MOSSERI, Bull. Inst. Egypt iv, i, pp. 5-35, 7 figg.
- Ichthyonema grayi*, anatomy, GEMMILL, Tr. Soc. Glasgow vi (3), pp. 299-301.
- Kalicephalus willeji* in *Vipera russelli*, Colombo, LINSTOW, Spolia Zeylan. i, 4, p. 99, pl. 1, figg. 14-18, **n. sp.**
- Leptosomatum papillatum*, Behring Island, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 276, figg. 9 & 10, **n. sp.**
- Lintonia papillosa*, anatomy, MONTICELLI, Arch. Zool. ii, 1, pp. 117-124, pl. vii.
- Mermis piscinalis*, Saratow, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 490, **n. sp.**
- Monhystera labiata*, Turkestan, DADAY, Zool. Jahrb. Syst. xxi, p. 480, pl. xxvii, figg. 1-3, **n. sp.**
- Myenchus* **n. gen.** for *M. bothryophorus* **n. sp.** in muscle cells of *Nephele vulgaris* (= *Herpobdella atomaria* Carena), anatomy, SCHUBERG, Verh. Ver. Heidelb. vii, pp. 629-632; *M. bothryophorus*, in muscle of *Nephele*, SCHUBERG & SCHRÖDER, Zeitschr. wiss. Zool. lxxvi, pp. 409-421, pl. xxx : **n. spp.**
- Neomermis* **n. gen.** for *N. macrolaimus* **n. sp.**, Saratow, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 491, figg. 13-15.
- Oxyspirura masoni* of chickens, symptoms, treatment, anatomy, life history and development, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, 25 pp., 18 figg.; *O. anacanthura*, p. 21, figg. 10 & 11, *O. anolabiata*, fig. 12, *O. brevipennis*, p. 22, fig. 13, *O. brevisubulata*, p. 23, *O. cephaloptera*, p. 23, figg. 14 & 15, *O. heteroclita*, p. 24, *O. mansoni*, p. 25, fig. 1-9, *O. ophthalmica*, p. 26, fig. 16-18, *O. papillosa*, p. 27, figg. 19 & 20, *O. siamensis*, p. 28, fig. 21, *O. stereura*, p. 29, *O. sygmoidea*, fig. 22, in eyes of birds, anatomy, synonymy, RANSOM, t. c.
- Oxyuris vermicularis*, occurrence, SCHNEIDER, Centrbl. Bakter. xxxvi, pp. 550-554; *O. tuberculata*, Australia, LINSTOW, Arch. Naturg. 1904, i, p. 300, fig. 9; *O. poculum* in horses, *O. acanthura* from *Calotes versicolor*, Ceylon, LINSTOW, Spolia Zeylan. i, 4, p. 101, pl. ii, fig. 19-22, **n. spp.**

- Parachordodes wolterstorffii*, *P. pleskei*, anatomy, CAMERANO, Boll. Mus. Torino xix, No. 470.
- Phyllodactylus europeus*, variations, CAMERANO, op. cit. No. 471, 28 pp.
- Physaloptera acuticauda*, *P.* sp. Parona, in eyes of birds, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, pp. 42 & 43, figg. 35-37.
- P. caucasica* in *Homo sapiens*, Caucasus, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 273, figg. 6-8, n. sp.
- Plectus (Plectoides) patagonicus*, Patagonia, anatomy, MAN, Ber. Senckenberg. Ges. 1904, pp. 41-46, 6 figg, n. sp.
- Polygordius* larvæ, Gulf of Triest, JANOWSKY, Arb. Inst. Wien xv, 2, pp. 197-212, 2 pls.
- P. neapolitanus*, Naples, *P. lacteus*, Helgoland, development, from egg to youngest trochophore stage, WOLTERECK, Arch. Entwicklmech. xviii, pp. 377-403, pls. xxii & xxiii + 11 figg.
- Rictularia paradoxa* in *Lemmus*, *Erinaceus* etc., LINSTOW, Annuaire Mus. St. Petersb. viii, p. 272, fig. 5, n. sp.
- Spiroptera tenuicauda* in eyes of *Craetomentosa*, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, p. 39, fig. 31; *S. sanguinolenta* causing tumours in dogs, PORTA, Atti Soc. Modena (4) iv, 35, p. 40.
- S. abdominalis*, Madagascar, in *Otis melanogaster*, LINSTOW, Arch. Naturg. 1904, i, p. 299, fig. 7; *S. dentata* from *Sus cristatus* Chilaw, p. 95, pl. i, figg. 5-7, *S. triangulum* from *Calotes ophiomachus*, Colombo, p. 96, fig. 8, LINSTOW, Spolia Zeylan. i, 4, n. spp.
- Strongylus gigas* in the kidney of a dog, CASELLA, Parma. Zerbini 1903, 3 pp.
- S. pigmentatus* from *Lepus nigricollis*, Ceylon, LINSTOW, Spolia Zeylan. i, 4, p. 93, pl. i, figg. 12 & 13; *S. quadriradiatus*, United States, in a pigeon, SALMON, Bull. U. S. Dep. Agric. Animal Ind. xlvii, 6 pp., 10 figg. : n. spp.
- Syngamus lari*, in eyes of birds, anatomy, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, p. 43, fig. 38-40.
- Tanqua* n. gen. for *Ctenocephalus* Linstow, BLANCHARD, Arch. parasit. viii, p. 478.
- Trichina*, at Homberg, epidemic, SCHLEIP, Verh. Ges. deutsch. Naturf. 1904, ii, pp. 59-62.
- Trichocephalus* in typhoid fever, BLANCHARD, Arch. parasit. ix, pp. 122-128.
- Tylenchus bioculatus*, on tea plants, Java and Ceylon, ZIMMERMANN, Ber. Land. Forstw. Deutsch. Ostafrika ii, pp. 11-36, pls. i-v.

ACANTHOCEPHALA.

[The following memoirs relate to *Acanthocephala*:—GIARD (158), LINSTOW (264, 267), LÜHE (282, 283), MARVAL (298), ROHDE (376), SCHNEIDER (403, 404).]

GENERAL BIOLOGY.

- Anatomy of *Echinorhynchus*, spp., LÜHE (283).
 Structure of the cell, ROHDE (376).
 Fish parasites, SCHNEIDER (404).
 Frogs parasitised by *Echinorhynchus hæruca*, GIARD (158).

DISTRIBUTION.

- North Russia, n. sp., LINSTOW (267).
 Finland, fish parasites, SCHNEIDER (403).
 West Africa, n. sp., LINSTOW (264).

SYSTEMATIC.

- Echinorhynchus* spp. described, LÜHE, Zool. Ann. i, 2, pp. 139-250; *E.* spp. anatomy and occurrence, LÜHE, t. c. pp. 139-250; *E. globulosus*, *E. acus*, p. 22, *E. angustatus*, p. 23, fig. 9, *E. clavula*, p. 27, *E. strumosus*, p. 29, Finland, anatomy, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3; *E. hæruca*, in frogs, GIARD, Feuille Natural. (4) xxxiv, p. 108. *E. phoenix*, Finland, anatomy, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3, p. 25, fig. 10; *E. cestodicola*, from *Sebastes norvegicus*, Murman Coast, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 278, figg. 11-14; *E. cestodiformis*, West Africa, from *Erinaceus albiventris*, LINSTOW, Centrbl. Bakter. xxxvi, p. 380, figg. 3 & 4 : n. spp. *Gigantorhynchus mirabilis*, in birds, MARVAL, Rev. Suisse Zool. xii, pp. 573-583, n. sp.

CHÆTOGNATHA.

[The following memoirs relate to *Chætognatha*:—APÁTHY (11), BROWNE (54), FOWLER (146), HERDMAN (192), PAULSEN (346), STEVENS (436).]

GENERAL BIOLOGY AND DISTRIBUTION.

Phosphorescence phenomenon in the Indian Ocean, HERDMAN (192).
Ovogenesis of *Sagitta*, STEVENS (436).
Iceland, plankton, PAULSEN (346).
Bay of Biscay forms, FOWLER (146).

SYSTEMATIC.

- Krohnia hamata*, Bay of Biscay, FOWLER, Nature lxi, p. 381.
Sagitta, connected with phosphorescence phenomenon in the Indian Ocean, HERDMAN, Rep. Brit. Ass. 1903-1904, pp. 695 & 696; *S. elegans*, *S. bipunctata*, ovogenesis, STEVENS, Zool. Jahrb. Anat. xxi, pp. 242-252, pl. xvi; *S. serratodentata*, Bay of Biscay, FOWLER, Nature lxi, p. 381.
Spadella, Iceland, PAULSEN, Medd. Komm. Havund. i, p. 40; *S.*, Scilly Isles, BROWNE, J. Inst. Cornwall xvi, 1, pp. 120-132.

ROTIFERA.

[The following memoirs relate to *Rotifera*:—BEAUCHAMP (22), BREHM & ZEDERBAUER (49), CHANCEY (82), COLLIN (102), DADAY (109), GARRARD (153), HURRELL (206), ISSEL (208), JENNINGS (219), LINDER (259), LORD (278), MEISSNER (302), MURRAY (327), SKORIKOV (418, 419), SMITH (421), WEIGELT (466), YAKHONTOV (478), ZSCHOKKE (482, 483).]

GENERAL BIOLOGY.

Asymmetry and its biological significance, JENNINGS (219).
Summer plankton of the Neva, SKORIKOV (419).
Bibliography for 1896, COLLIN (102).

DISTRIBUTION.

River Neva, lists of spp. found, SKORIKOV (419).
Lake Baical, list of spp. found, YAKHONTOV (478).

- Scotland, collections, MURRAY (327).
 Manchester, n. sp., LORD (278).
 Norfolk, ponds, collections, HURRELL (206).
 Paris, n. sp., BEAUCHAMP (22).
 Lac de Bret, n. spp., LINDER (259).
 Plön, collections, ZSCHOKKE (482).
 Geneva, n. sp., parasitic in *Trichodrilus*, ISSEL (208).
 Louisiana, n. sp., SMITH (421).

SYSTEMATIC.

- Balatro anguiformis*, genera, from *Trichodrilus*, ISSEL, Arch. Zool. ii, 1, pp. 1-9, pl. 1, n. sp.
Bdelloida, Scotland, collections, MURRAY, Ann. Scott. Nat. Hist., No. 51, 1904, pp. 160-166.
Cælopus inermis, Lac de Bret, LINDER, Rev. Suisse Zool. xii, p. 240, fig. 9, n. sp.
Diaptomus denticornis in Alpine lakes, BREHM & ZEDERBAUER, Verh. Ges. Wien 1904, p. 54.
Diaschiza crassipes, Manchester, LORD, Tr. Manchester Micr. Soc. 1903, pp. 78-80, fig. 3, n. sp.
Drilophaga delagei, Paris, BEAUCHAMP, Bull. Soc. zool. France xxix, pp. 157-160, 3 figg., n. sp.
Gastropus bretensis, Lac de Bret, LINDER, Rev. Suisse Zool. xii, p. 237, fig. 5, n. sp.
Mastigocera blanci, Lac de Bret, LINDER, t. c. p. 238, fig. 7, n. sp.
Meliceria ringens, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 517, fig. 85.
Notops falcipes, Lac de Bret, LINDER, Rev. Suisse Zool. xii, p. 238, fig. 6, n. sp.
Rattulidae, biological significance of asymmetry, JENNINGS, Mark Anniv. Vol. pp. 317-337.
Rotifer vulgaris, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 517, fig. 84.
Synchaeta bicornis, Louisiana, anatomy, SMITH, Tr. Amer. Micr. Soc. xxv, pp. 121-126, pl. xviii, n. sp.

GASTROTRICHA.

[The following memoirs relate to *Gastrotricha*:—COLLIN (102), GIARD (159, 160), ZSCHOKKE (482).]

GENERAL BIOLOGY AND DISTRIBUTION.

- Bibliography for 1896, COLLIN (102).
 Plön, collections, ZSCHOKKE (482).
 France, Pas-de-Calais, n. sp., GIARD (159).
 France, Pas-de-Calais, n. genera and spp., GIARD (160).

SYSTEMATIC.

- Chaetonotus marinus*, River Ambleuse, Pas-de-Calais, GIARD, C.R. Soc. Biol. lvi, p. 1062, figg. 1-3, n. sp.
Philosyrtis n. gen. for *P. monotoides* n. sp., River Ambleuse, Pas-de-Calais, GIARD, t. c. p. 1065, fig. 2.
Zelinkia n. gen. for *Z. plana* n. sp., River Ambleuse, Pas-de-Calais, GIARD, t. c. p. 1063, fig. 1.

MESOZOA.

NERESHEIMER (331).

Lohmannella catenata, at Villafranca, NERESHEIMER, Zeitschr. wiss. Zool. lxxvi, pp. 137-166, pls. x & xi.

HEMICHORDA.

[The following memoirs relate to *Hemichorda*:—BENEDEN (456), BROWNE (54), CAULLERY & MESNIL (76), LONGCHAMPS (274), RITTER & DAVIS (375), SCHEPOTIEFF (398), SCHULTZ (409), SPENGEL (428-433).]

GENERAL BIOLOGY.

Anatomy of *Ptychodera* spp., SPENGEL (428-433).
Ecology, morphology, and speciology of the young of some Western North American Enteropneusta, RITTER & DAVIS (375).
Regeneration in *Phoronis*, SCHULTZ (409).
Development and anatomy, VAN BENEDEN (456).

DISTRIBUTION.

Heligoland, *Phoronis* n. sp., LONGCHAMPS (274).

SYSTEMATIC.

- Actinotrocha branchiata*, p. 33, *A. pallida*, p. 45, LONGCHAMPS, Wiss. Meeresuntersuch. vi, 1.
Asymmetron orientale, *A. macrcaudatum*, Florida, PARKER, Bull. Mus. Harvard xlvi, 2, pp. 46 & 47, pl. i, fig. 4, pl. ii, fig. 7, n. spp.
Branchiostoma pelagicum, Florida, PARKER, t. c. p. 40, pl. i, figg. 1 & 2, n. sp.
Glossobalanus elongatus, Gulf of Naples, SPENGEL, Zool. Jahrb. Anat. xx, pp. 315-362, pls. xx-xxii, n. sp.
Heteropleuron agassiz, *H. parvum*, pp. 43 & 44, pl. ii, figg. 5 & 6, Florida, PARKER, Bull. Mus. Harvard xlvi, 2, n. spp.
Phoronis, development, VAN BENEDEN, Bull. Ac. Belgique 1903, pp. 1216-1232; *P.*, regeneration, SCHULTZ, Biol. Centrbl. xxiv, pp. 310-317; *P.*, Scilly Isles, BROWNE, J. Inst. Cornwall xvi, pp. 120-132; *P. gracilis*, anatomy, LONGCHAMPS, Wiss. Meeresuntersuch. vi, 1, p. 25.
P. mülleri, Heligoland, LONGCHAMPS, t. c. p. 9, pl. i, n. sp.
Protobalanus n. n. for *Bolanocephalus koehleri* Caull. and Mesn., CAULLERY & MESNIL, Zool. Jahrb. Anat. xx, pp. 227-256, pls. xii & xiii.
Ptychodera flava, *Pt. erythræa*, anatomy, SPENGEL, Zool. Jahrb. Anat. xviii, pp. 271-326, pls. xxiv-xxix, xx, pp. 1-18, pls. i-ii, pp. 413-428, pp. 315-362, pls. xx-xxii.
Tornaria ritteri Spengel, Western North America, morphology, ecology, RITTER & DAVIS, Univ. Calif. Publ. Zool. i, 5, pp. 171-198, pls.
T. hubbardi, Western North America, morphology and ecology, RITTER & DAVIS, t. c. p. 198, pls., n. sp.

XVI. CŒLENTERATA.

By

ALICE L. EMBLETON, B.Sc., F.L.S.

CONTENTS.

	Page		Page
INTRODUCTION	1	IV. SCYPHOZOA :—	
TITLES	3	A. Subject Index :—	
I. GENERAL (= <i>Cœlenterata</i> collectively)	15	General Biology	24
Subject Index :—		Geography	24
General Biology	16	B. Systematic	24
Geography	16	V. ANTHOZOA (including <i>Alcyonaria</i> and <i>Zoantharia</i>) :—	
II. HYDROMEDUSÆ (including <i>Hydrocorallina</i> and <i>Siphonophora</i>) :—		A. Subject Index :—	
A. Subject Index :—		General Biology	25
General Biology	16	Geography	25
Geography	17	B. Systematic	26
B. Systematic	17	VI. CTENOPHORA :—	
III. GRAPTOLITHIDA :—		A. Subject Index :—	
A. Subject Index :—		General Biology	35
General Biology	22	Geography	35
Geography	22	B. Systematic	35
B. Systematic	22		

INTRODUCTION.

THE output of Cœlenterate literature this year is thoroughly satisfactory both as regards the number of memoirs and also from the point of view of the interest of the work published. There are ten more titles recorded this year than last, and most branches of the subject are well represented.

There are several very good morphological contributions this year by DUERDEN (49-52); he discusses septal sequence in the *Madreporaria*, and also the development and relationships of the rugose corals. The

Craspedote medusa, *Olindias*, and some of its allies forms the subject of a paper by GOTO (79), and GRAVIER (81) describes a pelagic Cerianthe from the Gulf of California, *Dactylactis benedeni* n. sp. HARGITT (94) adds to Hydroids a new species from Long Island Sound; in a second paper he deals with some *Hydromedusæ* from the Bay of Naples. There is a monograph by JUNGENSEN (125) on the *Pennatulidæ*, and JANOVER (122) has devoted much work to the study of the genus *Solenocaulon*. NUTTING'S (170) monograph on the *Sertularidæ* of America has appeared during the year, and TORREY (209, 210) has reported on the *Hydroids* and *Ctenophora* of the San Diego region. Additions are made by VERRILL (220-225) to the *Anthozoa* and *Hydrozoa* of the Bermudas, West Indies and Brazil; he also has published some notes on the genus *Acropora*. The faunistic work of the year includes MAYER'S (155) paper on the Medusæ of the Bahamas, and McMURRICH'S (157) on the Actiniæ of the Plate Collection. HINDE (104) writes on the structure and affinities of the genus *Porosphaera*, and KINGSLEY (128) on *Cerianthus borealis*. From Japan (KISHINOUE (130)) we have some useful notes on the natural history of corals, and KITAHARA (131) reports on the coral fishery of Japan. The results of the dredging operations on the West Coasts of Central America and California have been given by MARENZELLER (152), and include a description of a new species of symbiotic Hydrocoralline. SWENANDER (206) describes the athecous Hydroids from Drontheim Fiord, and THOMSON (210) has a note on the gonostyles of two Antarctic *Siphonophora*. Hydroids collected in various parts of the world (outside Europe) are described by JÄDERHOLM (118) from the Swedish National Museum; he also has written on the Hydroids collected by the Swedish Antarctic Expedition of 1901-1903. DENNANT'S (35-38) four papers are descriptive of Australian recent and fossil forms; he gives many new species from the Australian Tertiaries.

There is a physiological paper by PRATT (177) on the assimilation and distribution of nourishment in *Alcyonium digitatum*. KREMPF (136) has noticed a transformation of the tentacle apparatus in certain species of *Madreporaria*. A chapter on Coral-reefs occurs in BRANNER'S (17) work on the stone corals of Brazil, while CROSSLAND (29) has studied the coral formations of Zanzibar and East Africa.

Matters of a wider biological interest are to be found in HUBRECHT'S (109, 110) papers on the relationships of various invertebrate phyla, of Annelids and Chordates, of Ctenophores and Platyhelminths. This is also touched upon by MICHAELSEN (159), and JENNINGS (123) work is upon asymmetry in certain lower organisms and its biological significance.

There are many papers again on regeneration and regulation. BORING (16) writes upon the closure of the longitudinally split Tubularian stems. CARLGREN'S (20) work on the correlation between regeneration and symmetry in Actiniæ is perhaps some of the most important that has appeared in this field of work this year. CHILD (24, 25) has written on form-regulation in *Cerianthus*, and GODLEWSKI (75) in *Tubularia mesembryanthemum*, while KING (127) did somewhat similar experiments on *Tubularia crocea*. HARGITT (93, 95) has published a note on regeneration in *Scyphomedusæ* and also on the budding tentacles of *Gonionemus*. It has been found, by LOEB (144), that sea-water has much influence on the regeneration and growth of Tubularians. MORGAN (162, 163) continues his work on regeneration and gives an analysis of organic polarity. YERKES (238) writes on the reaction time of *Gonionemus murbachii*. SCHULTZ (200, 201) also writes on regeneration. TORREY'S (208) work is on the habits and reactions, regeneration and non-sexual reproduction of *Sagartia davisii*. BILLARD (12) contributes to the study of multiplication, regeneration, grafting and variations in Hydroids, and DAVENPORT (34) discusses the variation in the stripes on the sea-anemone *Sagartia luciae*.

Cytologists will be interested in GORICH's (76) memoir on spermatogenesis in Sponges and *Cœlenterata*. GUENTHER (84) has carried on an allied enquiry in *Hydra viridis*; RETZIUS (183) too has worked on this subject. SCHNEIDER (199) has written an interesting note on the origin of the genital cells of Ctenophores.

Paleontological contributions are numerous. BOGATIREW (14) adds a new genus and six new species of Devonian forms from the Ural district. ELLES & WOOD (54) have now added another part to their monograph on British Graptolites. Graptolites from Sweden are described by HOLM (105, 106) and some new species from New York are recorded by RUEDEMANN (196), while HALL (87, 88) reports on those of Victoria. Swedish geological notes by HUENE (112) include a description of a medusa from the lower Silurian. FELIX (58-61) has given three memoirs on fossils from Egypt and also from the Jura region. Paleozoic corals are discussed by GRABAU (80).

Embryology is represented by some very good work this year. Students of this subject will be interested in HARGITT's (91, 92) papers on the early development of *Eudendrium* and *Pennaria tiarella*. RUEDEMANN (195) describes the mode of growth and development of *Goniograptus thureau*, and WOLTERECK (233) has followed the development of *Velella*.

ERRATA.

In Zool. Rec. 1903, p. 19, for *Turbularia* read *Tubularia*.

I. TITLES.*

1. [ANON.] Classification. Natural. Canad. xxxi, pp. 210-218. [*Cœlenterata*, pp. 216-218, 4 figg.]
2. [ANON.] Marine Biological Association. Plymouth marine invertebrate fauna, being notes of the local distribution of species occurring in the neighbourhood. Compiled from the records of the laboratory of the Marine Biological Association. J. Mar. Biol. Ass. vii, 2, pp. 155-298, 1 chart. [*Cœlenterata*, pp. 187-206.]
3. [ANON.] Use of Coral. Note in Tr. Woolhope Club 1900-1902, p. 102.
4. [ANON.] Borings into a coral reef. Nature lxi, pp. 582-585, 2 figg. Review of the report of the coral reef committee of the Royal Society. "The Atoll of Funafuti," 428 pp., 19 maps.
5. ABRIC, P. Sur le fonctionnement des nématocystes des Cœlentérés. C.R. Soc. Biol. lvi, pp. 1008-1010.
6. ——. Sur les nématoblastes et les nématocystes des Eolidiens. Op. cit. lvii, pp. 7-9.
7. ANNANDALE, N. *Porpita* in the Indian Seas. Nature lxx, p. 531.
8. ARKHANGHELSKII, A. D. Paleotzenovliza otlozheniya Saratovskagho Povolzhya i ikhzh fauna. Mat. Gheol. Rossii xxii, 1. *Cœlenterata*, p. 61.
9. BANCROFT, FRANK W. Note on the galvanotropic reactions of the Medusa *Polyorchis penicillata* A. Agassiz. Univ. Calif. publ. Physiol. ii, pp. 43-46, 4 text-figg.

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

10. BEEDE, J. W. & ROGERS, A. J. Coal measure faunal studies, III. Lower Coal Measures. Kansas Univ. Sci. Bull. ii, 15, pp. 459-473.
11. BEMMELEN, v. J. F. Het ontstaan en de geaardheid van Koraalriffen en -eilanden. Bull. kol. Mus. Haarlem 1904, No. 30, p. 37.
12. BILLARD, A. Contribution à l'étude des Hydroides (multiplication, régénération, greffes, variations). Ann. Sci. nat. (8) xx, pp. 1-236, 6 pls.
13. —. Développement de l'hydranthe des *Campanulariidae* et des *Plumulariidae*. C.R. Ac. Sci. cxxxix, 2, pp. 1038-1040.
14. BOGATIREW, N. Korallen der devonischen Schichten im Ural. Trudui Kazan. Univ. xxxii, 5, 71 pp., 1 pl.
15. BOLTON, H. The palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii. i. pp. 378-420. ii. pp. 578-650. iii. pp. 668-689.
16. BORING, ALICE M. Closure of longitudinally split Tubularian stems. Biol. Bull. vii, pp. 154-159.
17. BRÄNNER, J. C. The stone reefs of Brazil, their geological and geographical relations, with a chapter on the coral reefs. Bull. Mus. Harvard xlv, 285 pp., 97 pls.
18. BROWNE, E. T. & VALLENTIN, R. On the marine fauna of the Isles of Scilly. i. The pelagic fauna, E. T. BROWNE, pp. 120-128. ii. The shore fauna, R. VALLENTIN, pp. 128-132. J. Inst. Cornwall xvi, 1.
19. CAPEDEI, G. Sulla *Paronipora penicillata*, nuovo genere di corallario fossile, appartenente alla famiglia delle Favositidi. Riv. ital. Pal. x, 1, dp. 58-61, pls. ii & iii.
20. CARLGREN, O. Studien über Regenerations- und Regulationserscheinungen i. Über die Korrelationen zwischen der Regeneration und der Symmetrie bei den Actiniarien. Svenska Ak. Handl. xxxvii, No. 8, 105 pp., 11 pls., 23 text-figg.
21. —. Jahresbericht über die Anthozoen für das Jahr 1894. Arch. Naturg. 1897, ii, 3 [published in 1904].
22. CARY, L. R. Notes on a peculiar Actinozoan larva. Biol. Bull. vii, pp. 75-78, 4 figg.
23. CAULLERY, M. & MESNIL, F. Sur les affinités des Actinomxydies. C.R. Soc. Biol. lvi, pp. 411-413.
24. CHILD, C. M. Form regulation in *Cerianthus*. iv. Biol. Bull. vi, pp. 55-75, 266-287, 7 figg.; part v, vii, pp. 127-154; part vi, vii, pp. 193-215; part vii, vii, pp. 263-280.
25. —. Form-regulation in Cœlentera and *Turbellaria*. Smithsonian Collect. xlv, pp. 134-143.
26. CLARKE, J. M. Limestones of Central and Western New York interbedded with bituminous shales of the Marcellus stage, with notes on the nature and origin of their faunas. Rep. N. York Mus. lv, pp. 115-138. [List of fossils, p. 133.]
27. COOK, F. C. The chemical composition of some Gorgonian corals. Amer. J. Physiol. xii, pp. 95-98.
28. COUFFON, O. Étude critique sur les faluns du Haguineau. Bull. Soc. Angers xxxiii, pp. 35-85. [*Cœlenterata*, p. 40.]
29. CROSSLAND, C. The coral formations of Zanzibar and East Africa. Rep. Brit. Ass. 1903, pp. 685-687.

30. DACQUÉ, E. Beiträge zur Geologie des Somalilandes. i. Untere Kreide. Beitr. Pal. Oesterr.-Ung. xvii, pp. 11-20, pls. ii & iii.
31. DADAY, E. v. Mikroskopische Süßwasserthiere aus Turkestan. Zool. Jahrb. Syst. xxi, pp. 469-554, pls. xxvii-xxx, 5 figg.
32. DAINELLI, G. Contributo allo studio dell' Eocene medio dei dintorni di Ostroviza in Dalmazia. Atti Acc. Lincei (5) xiii, No. 5, pp. 277-282.
33. —. La fauna eocenica di Bribir in Dalmazia. Palæontogr. ital. x, 1904, pp. 141-273, pls. xv-xvii.
- DAINTREE, R. [See GREGORY & DAINTREE (83).]
34. DAVENPORT, GERTRUDE C. Variation in the number of stripes on the sea-anemone *Sagartia lucia*. Mark Anniv. Vol. 1903, New York, pp. 137-146, pl. x.
35. DENNANT, J. Descriptions of new species of corals from the Australian Tertiaries. vii. Tr. R. Soc. S. Austral. xxviii, pp. 52-76, pls. xxii-xxv.
36. —. Recent corals from the South Australian and Victorian coasts. T. c. pp. 1-11, pls. i & ii.
37. —. Catalogues of the described species of fossils (except *Bryozoa* and *Foraminifera*) in the Cainozoic fauna of Victoria, S. Australia and Tasmania. Rec. Geol. Surv. Victoria i, 2, pp. 89-147.
38. —. Report on fossiliferous ironstone conglomerate from Cape Patton. T. c. i, 1, p. 36. [*Anthozoa*.]
39. DESTINEZ, P. Faune et flore des psammites du Condroz (Famennien). Ann. Soc. geol. Belgique xxxi, 3, pp. 247-257. [*Cœlenterata*, p. 257.]
40. —. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. T. c. xxxi, 1, pp. 143-151.
41. —. Fossiles viséens de Seille et de Comblain-au-Pont. Op. cit. 1899, xxvi, pp. cix-cxiii.
42. —. Quelques fossiles de Pair (Clavier), 1897. Op. cit. xxiv, pp. xxxviii & xxxix.
43. —. Troisième note sur les fossiles du marbre noir de Pair, 1898. Op. cit. xxv, pp. xxxiv-xxxvi.
44. —. Quatrième note sur les fossiles du calcaire de Pair, 1899. Op. cit. xxvi, pp. lviii & lix.
45. DEWALQUE, G. Les fossiles du Bolderberg et les fossiles boldériens. Ann. Soc. geol. Belgique xxv, pp. 117-122, 1899.
46. DIENER, C. Himalayan Fossils. i, 5. Permian Fossils of the Central Himalayas. Pal. Ind. xv, 204 pp., pls. i-x. [*Cœlenterata* pl. ii.]
47. DOLLFUS, G.-F. Faune malacologique du Miocène supérieur de Rennes (Étage Redonien, Gite d'Apigné) (Ille-et-Vilaine). C.R. Ass. Franc. xxxii, pp. 656-663.
48. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf Westerwald. Palæontogr. l, 6, pp. 229-282.
49. DUERDEN, J. E. Some results on the morphology and development of recent and fossil corals. Rep. Brit. Ass. 1903, pp. 684 & 685. [Appeared also in Mem. Ac. Washington viii.]
50. —. Septal sequence in Coral *Siderastræa*. T. c. p. 687.

51. [DÜRDEN, J. E.] The morphology of the *Madreporaria*. v. Septal sequence. Biol. Bull. vii, pp. 79-104, 9 figg.
52. —. The development and relationships of the Rugosa (*Tetracoralla*). Science xix, p. 217.
- 52A. —. The Coral *Siderastrea radians* and its post-larval development. Publ. Carnegie Inst. No. 20, 4to, 130 pp., xi plates.
53. ELLES, GERTRUDE L. Some Graptolite zones in the Arenig Rocks of Wales. Geol. Mag. i, 5, pp. 199-211, 3 figg.
54. — & WOOD, ETHEL M. R. A monograph of British Graptolites, edited by C. Lapworth. Pal. Soc. Mon. lviii, 1904, part iv, pp. liii-lxxii, 135 + 180, pls. xx-xxv.
55. ENTZ, G. Az édesvízek élete. Termes. Kozl. Magyar Tars. 1904, pp. 616-636, 9 text-figg.
56. ETHERIDGE, R. Determinations of Palæozoic and Mesozoic fossils. Rec. Geol. Surv. Victoria i, 1, pp. 10-12. [*Anthozoa*.]
57. FALKNER, C. & LUDWIG, A. Beiträge zur Geologie der Umgebung St. Gallens. Jahrb. St. Gall. Ges. 1901-1902, pp. 475-620.
58. FELIX, J. Zkřemenělé korály jako valouny v diluvín Slezska a Moravy. Vestník Klub. Prostějove 1904, vi, pp. 108-116, 2 figg.
59. —. Polypiers du Sénonien Portugais. Commun. geol. Portugal v, 1904, pp. 375-388, 1 pl.
60. —. Studien über tertiäre und quartäre Korallen und Riffkalke aus Ägypten und der Sinaihalbinsel. Zeitschr. Deutsch. geol. Ges. lvi, 2, pp. 168-206, pl. x, 6 text-figg.
- ✓ 61. —. Die fossile Fauna des Libanesischen Jurakalkes. i. Die Anthozoenfauna des Glandarienkalkes. Beitr. Pal. Oesterr.-Ung. xv, pp. 165-183, pls. xvi & xvii.
- ✓ 62. FOERSTE, A. F. The Ordovician-Silurian contact in the Ripley Island area of Southern Indiana, with notes on the age of the Cincinnati geanticline. Amer. J. Sci. (4) xviii, pp. 321-342, 1 pl.
63. —. Silurian and Devonian Limestones of Tennessee and Kentucky. Bull. Geol. Soc. Amer. 1901, xi, pp. 395-444, 8 figg.
64. FORREST, H. E. Corals and Coral-reefs. Tr. Woolhope Club 1900-1902, p. 101.
65. FOURTEAU, R. Contribution à l'étude de la faune Crétacique d'Égypte. Bull. Inst. Égypte iv, 4, pp. 231-349. [*Anthozoa*, pp. 345-347, 4 figg.]
- ✓ 66. FOX, H. Geological notes. II. Supplementary notes on the distribution of fossils on the north coast of Cornwall south of the Camel. Tr. geol. Soc. Cornwall xii (9), pp. 753-759. [*Cœlenterata*, p. 755.]
67. FOX-STRANGWAYS, C. The geology of the Oolitic and Cretaceous rocks south of Scarborough. Mem. geol. Surv. England and Wales 54 & 55, pp. 1-112, xi pls, 12 text-figg.
68. GARDINER, J. S. Fauna... of the Maldive and Laccadive Archipelagoes. II, part 3. *Hydromedusæ* with a revision of the *Willadiæ* and *Petasiæ*, E. T. BROWNE, pp. 722-749.—*Madreporia*, parts 1 & 2, J. S. GARDINER, pp. 755-790.—*Antipatharia*, C. FORSTER-COOPER, pp. 791-796. [Will be recorded in detail in next year's volume.]
69. —. Coral-reefs of the Indian region. [4th report of the Committee.] Rep. Brit. Ass. 1903, pp. 305-308.

70. [GARDINER, J. S.] The formation of Coral-reefs. *Nature* lxi, pp. 371-373, 4 figg.
71. —. Corals. *Science* xx, pp. 765 & 766.
72. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. *Mem. Mus. Belgique* i, 81 pp.
73. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. *Trav. Lab. Arcachon* vii, pp. 86-161.
- ✓ 74. Girty, G. H. The Carboniferous formations and faunas of Colorado. *Prof. Papers U. S. Geol. Surv.* 16, 1903, 546 pp.
75. GODLEWSKI, E., jun. Zur Kenntnis der Regulationsvorgänge bei *Tubularia mesembryanthemum*. *Arch. Entwicklmech.* xviii, pp. 111-160, pls. viii & ix, 7 figg.
76. GÖRICH, W. Zur Kenntnis der Spermatogenese bei den Poriferen und Cölenteraten nebst Bemerkungen über die Oogenese der ersteren. *Zeitschr. wiss. Zool.* lxxvi, pp. 522-543, pl. xxxi.
77. GORKA, S. Az állatok psychikai életéről. *Allatt. Kozl. Magyar Tars.* i, 1902, pp. 62-72.
78. —. Az állatok psychikai életéről. *T. c.* pp. 104-113, 8 figg.
79. GOTO, S. The craspedote medusa *Olindias* and some of its natural allies. *Mark Anniv. Vol. New York*, 1903, pp. 3-22, pls. i-iii.
80. GRABAU, A. W. Paleozoic coral-reefs. *Bull. Geol. Soc. Amer.* xiv, pp. 337-352, pls. xlvii & xlviii.
81. GRAVIER, C. Recherches sur un Cérianthaire pélagique du Golfe de Californie (*Dactylactis benedeni* n. sp.). *Ann. Sci. nat.* xx, pp. 253-289.
82. —. Sur la Méduse du Victoria Nyanza et la fauna des grands lacs africains. *Bull. Mus. Paris* 1903, pp. 347-352.
83. GREGORY, A. C. & DAINTREE, R. Fossils from the Carboniferous of Queensland and Western Australia. *P. Soc. Victoria* xvi, 2, pp. 313-335.
84. GUENTHER, K. Keimfleck und Synapsis. Studien an der Samenreife von *Hydra viridis*. *Zool. Jahrb. Suppl.* vii, pp. 139-160, pl. xi.
85. GUPPY, R. J. L. Note on the discovery of corals in the harbour of Port-of-Spain. *P. Inst. Trinidad* iii, 1899, pp. 168 & 169.
86. GÜRICH, G. Eine Stromatoporida aus dem Kohlenkalke Galiziens. *Beitr. Pal. Oesterr.-Ung.* xvii, pp. 1-5, pl. 1.
87. HALL, T. S. Reports on Graptolites. A revision of the species from Eastern Victoria. *Rec. geol. Surv. Victoria* i, 1, pp. 33-35, 2 figg.
88. —. Reports on Graptolites. *T. c.* 3, pp. 217-221, 2 figg.
89. HALL, M. A. & PRITCHARD, G. B. The Geology of the Barwon about Inverleigh. *P. Soc. Victoria* xvi, 2, pp. 292-305.
90. HARGITT, C. W. Notes on some *Hydromedusæ* from the Bay of Naples. *Mt. Stat. Neapel* xvi, 4, pp. 553-585, pls. xxi & xxii.
91. —. The early development of *Eudendrium*. *Zool. Jahrb. Anat.* xx, pp. 257-276, pls. xiv-xvi.
92. —. The early development of *Pennaria tiarella* McCr. *Arch. Entwicklmech.* xviii, pp. 453-488, pls. xxiv-xxviii.
93. —. Regeneration in *Scyphomedusæ*. *Amer. Natural.* xxxviii, pp. 517-519.

94. [HARGITT, C. W.] Notes on a hitherto undescribed Hydroid from Long Island Sound. Biol. Bull. vii, pp. 251-253, 1 fig.
95. HARGITT, G. T. Budding tentacles of *Gonionemus*. Biol. Bull. vi, pp. 241-250, 9 figg.
96. HARTLAUB, C. Bericht über eine zoologische Studienreise nach Frankreich, Grossbritannien und Norwegen. Wiss. Meeresuntersuch. v, 2, pp. 97-106, 3 text-figg.
97. HAYDEN, H. H. Memoirs of the geological survey of India. Mem. geol. Surv. India xxxvi, i, pp. 1-129.
98. HEDLEY, C. The formation of coral-reefs. Nature lxx, p. 319.
99. HEICKE, A. Ein Beitrag zur Kenntnis der Weichteile der Madreporarier. Arch. Naturg. 1904, i, pp. 253-296, pl. xii.
100. HICKSON, S. J. Polymorphism in the *Pennatulida*. Rep. Brit. Ass. 1903, p. 688 [will be published in extenso in the reports of the Siboga expedition].
101. —. [President's address to the Zoological Section.] Rep. Brit. Ass. 1903, pp. 680-684. [Variation and regeneration in *Cœlenterata*.] New matter.
102. HIND, W. On the homotaxial equivalents of the Lower Culm of North Devonshire. Geol. Mag. i, 8, pp. 397-403.
103. HINDE, G. J. On the zone of Marsupites in the chalk at Beddington, near Croydon, Surrey. Geol. Mag. i, 10, pp. 482-487. [Lists of spp.]
104. —. On the structure and affinities of the genus *Porosphæra* Steinmann. J. R. Micr. Soc. 1904, pp. 1-25, pls. i & ii.
105. HOLM, G. Kinnekulles berggrund. Sveriges geol. Unders. Afh. C. 172, 1901, pp. 1-118, 4 pls. Graptolites, pp. 37-63, figg. 31-59.
106. —. Palæontologiska notiser. Op. cit. 179, 104 pp., 14 pls. Graptolites, pp. 101-104.
107. HOLMES, W. MURTON. List of fossils collected. [Surrey.] P. Croydon Club 1903-1904, pp. 45 & 46.
108. HOLMGREN, E. Zur Kenntnis der zylindrischen Epithelzellen. Arch. mikr. Anat. lxxv, 2, pp. 280-297, pls. xviii & xix, 5 figg.
109. HUBRECHT, A. A. W. On the relationship of various invertebrate phyla. P. Ac. Amsterdam, April 23, 1904, pp. 839-846.
110. —. Die Abstammung der Anneliden und Chordaten und die Stellung der Ctenophoren und Plathelminthen im System. Jena. Zeitschr. xxxix, 1, pp. 151-176.
111. HUDLESTON, W. H. On the origin of the marine (Halolimnic) fauna of Lake Tanganyika. Geol. Mag. i, 7, pp. 337-382, 2 pls.
112. HUENE, F. v. Geologische Notizen aus Oeland und Dalarne sowie über eine Meduse aus dem Untersilur. Centrbl. Mineral. 1904, pp. 450-461, 6 figg.
113. HUNTER, W., junr. Some reactions of *Mnemiopsis leydyi* (A. Ag.). Biol. Bull. vi, p. 324.
114. HUNTER, G. W. Some reactions of *Mnemiopsis leydyi*. Science xix, pp. 219 & 220.
115. HURRELL, H. E. *Polyzoa*. Tr. Norfolk Soc. vii, 5, p. 755. [*Hydra*, p. 756.]

116. HYDE, IDA H. Differences in electrical potential in developing eggs. Amer. J. Physiol. xii, pp. 241-275.
117. ISEKLE, J. Zpráva o novém nalezišti fauny v břidlici pásma D-d₁₇, u Rokycan. SB. Bohmisch. Ges. 1903, xxix.
118. JÄDERHOLM, E. Aussereuropäische Hydroiden im schwedischen Reichsmuseum. Arkiv Zool. i (3), pp. 259-312, 4 pls.
119. —. Mitteilungen ueber einige von der Schwedischen Antarctic-expedition 1901-1903 eingesammelte Hydroiden. Arch. zool. exp. Notes (4) iii, pp. i-xiv.
120. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmischem Kreideformation. Jahrb. geol. Reichsanst. liv (1), 1904, pp. 75-90.
121. JANENSCH, W. Über *Heterocenia provincialis* Mich. sp. eine Hexakoralle vom Habitus der Tubipora. Zeitschr. Deutsch. geol. Ges. lv, 4, pp. 486-493.
122. JANOWER, M. Die Gattung *Solenocaulon*. Rev. Suisse Zool. xii, pp. 495-538, pls. vii & viii.
123. JENNINGS, H. S. Asymmetry in certain lower organisms and its biological significance. Mark Anniv. Vol. 1903, New York, pp. 317-337.
124. JUKES-BROWNE, A. J. The Cretaceous rocks of Britain. The upper chalk of England. Mem. geol. Surv. U. K. iii, 1904, 566 pp. [*Anthozoa* and *Hydrozoa*, lists, pp. 503 & 504.]
125. JUNGENSEN, H. F. E. *Pennatulida*. Danish Ingolf. Exp. v, 1, 95 pp., 3 pls., 3 figg.
126. KARASKASCH, N. I. Note sur la faune contenue dans les galets de Bolschезemelskaia toundra. Protok. St. Peterb. Obshch. xxxv, 1904, 3. [French résumé, p. 162], pp. 130-146.
127. KING, H. D. Notes on regeneration in *Tubularia crocea*. Biol. Bull. vi, pp. 287-306, 7 figg.
128. KINGSLEY, J. S. A description of *Cerianthus borealis* Verrill. Tufts Coll. Stud. 1904, No. 8, pp. 345-361, 7 figg.
129. KINKELIN, F. Die Originale der paläontologischen Sammlung im Senckenbergischen Museum und die auf dieselben bezügliche Literatur. Ber. Senckenberg Ges. 1903, pp. 1-88. [*Cœlenterata*, list, pp. 52 & 53.]
130. KISHINOUE, K. Notes on the natural history of Corals. J. Imp. Fish. Bureau Tokyo xiv, 1, 32, pp., pls. i-ix.
131. KITAHARA, T. On the coral fishery of Japan. J. Imp. Fish. Bureau Tokyo xiii, 3, 14 pp., pls. i-v.
132. KITSON, A. E. Report on the Bryozoan limestone at Flinders. Rec. geol. Surv. Victoria i, 1, pp. 49-51. [List of *Anthozoa*.]
133. KNIPOWITSCH, N. Explorations zoologiques sur le bateau casse-glace "Ermak" en été de 1901. Annuaire Mus. St. Petersb. vi, pp. i-xx, 1 pl.
134. KOFORD, C. A. Biological survey of the waters of Southern California at San Diego. Science xix, pp. 505-508.
135. KOROTNEFF, A. DE. Résultats d'une expédition zoologique au lac Baikal, pendant l'été de 1902. Arch. Zool. exp. (4) ii, xxxii, pp. 1-26.

136. KREMPF, A. Sur une transformation de l'appareil tentaculaire chez certains espèces de *Madrepora*. C.R. Ac. Sci. cxxxviii, pp. 1518-1521.
137. KÜKENTHAL, W. Ueber einige Korallentiere des Roten Meeres. Denk. Ges. Jena 1904, Hæckel Festschr. pp. 31-58, pls. iv & v.
138. LAMPLUGH, S. W., KILROE, J. R., M'HENRY, A., SEYMOUR, H. J., WRIGHT, W. B., MUFF, H. B. The Geology of the County of Belfast. Mem. geol. Surv. Ireland 1904, 166 pp.
139. *LAUTERBORN, R. Leonhard Baldners Vogel ; Fisch- und Tierbuch-Ludwigshafen, 1903, lxvi, 177 pp.
Review by ZSCHOKKE, Zool. Zentrbl. xi, pp. 412-415.
140. —. Beiträge zur Fauna und Flora des Oberrheins und seiner Umgebung. Mt. Pollichia Jahrb. lx, 19, pp. 42-130.
141. LAWSON, A. C. The Orbicular Gabbro at Dehesa, San Diego Co., California. Univ. Calif. publ. Geol. iii, pp. 383-396, pl. 46.
LESPINEUX, G. [See MALAISE & LESPINEUX (150).]
142. LHOMME. Coquilles fossiles trouvées en 1903 dans les sables de Saint-Gobain (Yprésien). Feuille Natural. (4) xxxiv, pp. 103-106.
143. LINDER, C. Étude de la faune pélagique du Lac de Bret. Rev. Suisse Zool. xii, pp. 149-258, pl. iv.
144. LOEB, J. On the influence of the reaction of the sea-water on the regeneration and growth of Tubularians. [Translated from Pflüger's Arch. ci, p. 340, 1904, by J. B. MACCALLUM.] Univ. Calif. Publ. Physiol. i, 15, pp. 139-147.
145. LOPPENS, K. Bryozoa et Cnidozoa nouveaux pour la faune Belge trouvés par la plupart pendant l'année 1903. Bull. Soc. zool. Belgique xxxix, pp. xlv-xlvii.
146. —. Sur une variété de *Membranipora membranacea* L. et sur quelques animaux marins vivant dans l'eau saumâtre. Ann. Soc. zool. Belgique xxxviii, Bull. pp. cxlii & cxliii.
LUDWIG, A. [See FALKNER & LUDWIG (57).]
147. LUTHER, A. Planktologiska och hydrofaunistiska studier i Lojo Sjö under sommaren 1901. Medd. Soc. Faun. Fenn. xxviii, A, pp. 52-55.
148. MAAS, O. Revision des Méduses appartenant aux familles des *Cunanthidae* et des *Eginidae* et groupement nouveau des genres. Bull. Mus. Monaco, No. 5, 1904, 8 pp.
Abstract of a memoir which will appear in the publications of the scientific expeditions of the Prince of Monaco.
149. MAEHRENTHAL, F. C. v. Entwurf von Regeln der Zoologischen Nomenclatur. Als Grundlage für eine Neubearbeitung der internationalen Regeln der internationalen Nomenclatur. Zool. Ann. i, 2, pp. 89-138.
150. MALAISE, C. & LESPINEUX, G. Découverte de graptolithes à Neuville-sur-Meuse. Ann. Soc. geol. Belgique xxxi, 3, pp. 140 & 141.
151. MARCHAL, P. Recherches sur la biologie et le développement des Hyménoptères parasites. Arch. Zool. exp. xxxii, 3, pp. 257-335, pls. ix-xiii.
Discusses budding in various groups of animals.

152. MARENZELLER, E. v. Reports on the dredging operations of the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Comm. Steamer "Albatross," during 1891, Lieut. Comm. Z. L. Tanner, U.S.N. commanding. xxxiii, Stein- und Hydro-Korallen, 3 pls. xxxiv, *Lagisca irritans* sp. nov. ein Symbiont von Hydrokorallen, 1 pl. Bull. Mus. Harvard xliii, Nos. 2 & 3, pp. 75-94.
- 152A. —. Steinkorallen. Wiss. Ergebn. Valdivia vii, Lief. 3, pp. 261-318, pls. xiv-xviii.
153. MARTIN, HARRIETT A. *Verella spiralis* on the Cork coast. Irish Natural. xiii, p. 27.
154. MAYER, A. Medusæ of the Bahamas. Mem. Mus. Brooklyn i, 1, 33 pp., 7 pls.
155. —. Medusa fauna of the Bahamas. Amer. Natural. xxxviii, pp. 511-513.
156. MAXWELL, S. S. Comparative study of muscular tonus. Science xix, p. 249.
157. McMURRICH, J. P. The Actiniæ of the Plate Collection. Fauna Chilensis. Zool. Jahrb. Suppl. iii, 2, 1904, pp. 215-306, pls. xiv-xix, 5 figg.
158. MEISENHIMER, J. Review of RÖMER & SCHAUDINN's Fauna Arctica i, 1. Einleitung, Plan des Werkes und Reisebericht. Jena 1900, pp. 1-84, 2 pls. Zool. Zentrbl. xi, pp. 179-183.
 MERY, JANET R. [See TORREY & MERY (211).]
 MESNIL, N. [See CAULLERY & MESNIL (23).]
159. MICHAELSEN, W. Revision der compositen Styeliden oder Polyzoinen. Mt. Mus. Hamburg xxi, pp. 1-124, 2 pls.
 Affinities of *Coelenterata* discussed.
160. MOORE, J. E. S. The Victoria Nyanza jelly-fish. Nature lxi, p. 365.
161. MORGAN, J. The structure and growth of corals. Rep. E. Kent Soc. (2) i, pp. 7-14, 4 pls.
162. MORGAN, T. H. Notes on regeneration. Biol. Bull. vi, pp. 159-172.
163. —. An analysis of the phenomena of organic polarity. Science xx, pp. 742-748.
- ✓ 164. MUNTHE, H. Stratigrafiska studier öfver Gotlands Silurlager. Sveriges geol. Unders. Äfh. No. 192, 55 pp.
165. NEVEU-LEMAIRE, M. LE. Mission scientifique de MM. G. de Créqui-Montfort et F. Sénéchal de la Grange dans l'Amérique du Sud. Bull. Soc. zool. France xxix, 4, pp. 82-89.
166. NOBRE, A. Subsídios para o estudo da fauna marinha do norte de Portugal. Ann. Sci. nat. Porto viii, pp. 37-94. [*Coelenterata*, pp. 38-51.]
167. —. Subsídios para o estudo da fauna marinha do sul de Portugal. T. c. pp. 153-160. [*Coelenterata*, p. 154, 4 spp.]
168. NOËL, C. Sur la faune des lydiennes du grès Vosgien. C.R. Ac. Sci. cxxxviii, pp. 1531-1533.

169. NUTTING, C. C. Preliminary description of a new family of gymno-blastic Hydroids from the Hawaiian Islands. *Science* xix, p. 217. [To be published as a report on the hydroids collected by the *Albatross*, U. S. Bureau of Fisheries.]
170. —. American Hydroids. Part II. The *Sertulariæ*. Special Bull. U. S. Mus. 1904, 151 pp., 41 pls.
- ✓ 171. D'OSSAT, DE A. Terza contribuzione allo studio della fauna fossile paleozoica delle Alpi Carniche. *Atti Acc. Lincei* (5) iv, pp. 84–120, 1 pl. [3 n. spp.]
172. PARKINSON, J. H. The zoning of the culm in South Germany. *Geol. Mag.* (5) i, pp. 272–276.
173. PARKES, W. A. A remarkable parasite from the Devonian rocks of the Hudson Bay Slope. *Amer. J. Sci.* xviii, pp. 135–140, 6 figg.
174. PERKINS, H. F. Studies of the morphology of *Hydromedusæ*. *Science* xix, pp. 250 & 251.
175. —. Double reproduction in the Medusa *Hybocodon prolifera*. *Amer. Natural.* xxxviii, p. 516.
176. POLÉNOFF, B. Description géologique de la partie nord-ouest de la 15-me feuille du VIII zone et de la partie sud-ouest de la 15-me feuille du VII zone de la carte générale du gouvernement Tomsk. *Trav. geol. St. Petersb.* iii, 1901, pp. 133–339.
177. PRATT, EDITH M. The assimilation and distribution of nutriment in *Alecyonium digitatum*. *Rep. Brit. Ass.* 1903, pp. 688 & 689.
- PRITCHARD, G. B. [See HALL & PRITCHARD (89).]
178. RANSOME, F. L. The geology and ore deposits of the Bisbee Quadrangle, Arizona. *Prof. Papers U. S. Geol. Surv.* xxi, 1904, 112 pp. Lists of spp. pp. 36–38.
179. REGNY, VINASSA DE P. E. Fossili ed impronte del Montenegro. *Boll. Soc. geol. Ital.* xxiii, pp. 307–322, pl. ix.
180. REMEŠ, M. O zkamenělinách bludných balvanů z okolí Příbora. *Vestník. Klub. Prostejove* 1898, i, pp. 5–10.
181. —. Zkameněliny bludných balvanů z okolí Příbora. *Op. cit.* 1904, vi, pp. 107 & 108.
Note on paper of 1898.
182. RENZ, C. Zur Alterbestimmung des Carbons von Budua in Süd-Dalmatien. *Zeitschr. Deutsch. geol. Ges.* lv, pp. 16–22.
183. RETZIUS, G. Zur Kenntnis der Spermien der Evertebraten. *Biol. Untersuch.* xi, pp. 1–32, pls. i–xiii.
184. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. *Ann. Univ. Lyon fasc.* xiv, 252 pp., viii pls. [*Cæleenterata*, p. 21, note of occurrence of *Trochocyathus calcar.*]
185. RICHET, C. Des effets prophylactiques de la thalassine et anaphylactiques de la congestive dans le virus des Actinies. *C.R. Soc. Biol.* lvi, pp. 302 & 303.
186. ROESINGER, G. La mode de vie des Graptolithes. *Arch. Sci. Nat.* xviii, pp. 199 & 200.

187. ROHDE, E. Untersuchungen über den Bau der Zelle. iv. Zum histologischen Wert der Zelle. Zeitschr. wiss. Zool. lxxviii, pp. 1-149, pls. i-vii.
188. ROSENFELD, G. Studien über das Fett der Meeresorganismen. Wiss. Meeresuntersuch. v, 2, pp. 57-85.
189. ROULE, L. Sur la place des Antipathaires dans la systématique, et la classification des Anthozoaires. C.R. Ac. Sci. cxxxviii, pp. 1621 & 1622.
190. —. La place des Antipathaires dans la systématique, et la classification des Anthozoaires. Bull. Mus. Monaco 1904, No. 16, 3 pp.
191. —. Note préliminaire sur quelques formes nouvelles de Cérianthaires. C.R. Ass. Franc. xxxii, pt. 2, pp. 791-793.
Note in pt. 1, p. 226 to same effect.
192. —. Sur un Cérianthaire nouveau. C.R. Ac. Sci. cxxxviii, pp. 708-710.
193. ROUSSEL, M. Tableau stratigraphique des Pyrénées. Bull. Carte geol. France xv, No. 97, pp. 1-116, 3 pls., 66 figg.
194. ROWE, A. W. The zones of the white chalk of the English coast. iv. Yorkshire. P. Geol. Ass. xviii (4), pp. 193-296, pls. xvii-xl. *Anthozoa*, p. 293.
195. RUEDEMANN, R. Mode of growth and development of *Goniograptus thureani*. Rep. N. York Mus. lv, pp. 576-592, 19 figg.
196. —. The Graptolite (Levis) facies of the Beekmantown formation in Rensselaer Co. N. Y. T. c. pp. 545-575. [Several n. spp. unnamed and undescribed.]
- ✓ 197. —. Paleontologic Papers. II. Trenton conglomerate of Rysedorph Hill, Rensselaer Co., N. Y., and its fauna. T. c. pp. 3-114. [*Cœlenterata*, pp. 10-12.]
198. SCHEPOTIEFF, A. Zur organisation von *Rhabdopleura*. Bergens Mus. Aarbog 1901-2, 21 pp., 3 pls. [*Anthozoa* and *Hydromedusae* mentioned.]
199. SCHNEIDER, K. C. Histologische Mitteilungen. I. Die Urogenitalzellen der Ctenophoren. Zeitschr. wiss. Zool. lxxvi, pp. 388-399, pl. xxiv.
200. SCHULTZ, E. Über Reduktionen. I. Über Hungererscheinungen bei *Planaria lactea*. Arch. Entwickmech. xviii, pp. 555-577, pl. xxxiv. [Includes references to *Cœlenterata*.]
201. —. Regenerationsweisen. Biol. Centrbl. xxiv, pp. 310-317.
202. SEKERA, E. O původu zelené barvy u některých ploštěnek. Vestník. Klub. Prostejove vii, pp. 93-107.
- ✓ 203. SMYČKA, F. Novější nálezy v čelechovském devonu. Vestník. Klub. Prostejove 1905, vii, pp. 53-72, 1 pl. [*Cœlenterata*, pp. 54-60.]
204. SOBOLEW, D. Zur Stratigraphie des oberen Mitteldevons im polnischen Mittelgebirge. Zeitschr. Deutsch. geol. Ges. lvi, 3, pp. 63-72.
205. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante. Zapiski Kiev. Obsch. xviii, pp. i-xiii, 1-487, 1-216 + iv pls. [In Russian.]

206. SWENANDER, G. Über die athecaten Hydroiden des Drontheims-fjordes. Norske Selsk. Skr. 1903, No. 6, 18 pp., 1 pl.
207. THOMSON, J. A. Scotia collections. Note on the gonostyles of two Antarctic *Siphonophora*. P. Phys. Soc. Edinb. xvi, pp. 19-22.
208. TORREY, H. B. On the habits and reactions of *Sagartia davisii*. Biol. Bull. vi, pp. 203-216.
209. —. The Hydroids of the San Diego region. Univ. Calif. publ. Zool. ii, pp. 1-43, 23 text-figg.
210. —. The *Ctenophores* of the San Diego region. T. c. pp. 45-51, pl. i.
211. — & MERY, JANET R. Regeneration and non-sexual reproduction in *Sagartia davisii*. Univ. Calif. publ. Zool. i, 6, pp. 211-226, 9 figg.
212. TOULA, F. Geologische Beobachtungen auf einer Reise in die Gegend von Silistria und in die Dobrudscha im Jahre 1892. Jahrb. geol. Reichsanst. liv, pp. 1-46, 3 pls., 19 figg.
213. TRINCI, G. Notizie sulla gemmazione della "*Dysmorphosa minuta*." A. G. Mayer e sulla biologia delle Margelidæ in generale. Monit. Zool. ital. xv, pp. 304-310.
214. TRUE, R. H. Artificial sea waters as tested in aquaria. Science xix, p. 252.
215. ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg. Verh. Ver. Hamburg. naturw. xi, pp. 1-24, 1 pl.
216. ULRICH, E. O. & VAUGHAN, T. W. *Hydrozoa* and *Anthozoa*. Maryland geol. Surv. 1904, pp. 433-447.
217. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Danmarks geol. Unders. iii, 2, pp. 1-359, 3 pls.
218. VANHÖFFEN, E. Die Tierwelt des Südpolarebiete. Zeit. Ges. Erd. Berlin 1904, pp. 362-370, 11 figg.
- ✓ 219. VAUGHAN, A. Notes on the Corals and Brachiopods obtained from the Avon section and preserved in the Stoddart Collection. P. Bristol Soc. x, 2, pp. 90-134, 2 pls.
- VAUGHAN, T. W. (See ULRICH & VAUGHAN (216).]
220. VERRILL, A. E. Additions to the *Anthozoa* and *Hydrozoa* of the Bermudas. Tr. Connect. Ac. x (2), pp. 551-572, pls. lxxvii-lxix.
221. —. Additions to the fauna of the Bermudas from the Yale Expedition of 1901 with notes on other species. Op. cit. xi (1), pp. 15-62, pls. i-xi.
222. —. Comparisons of the Bermudian, West Indian, and Brazilian Coral Faunae. T. c. pp. 168-206, pls. x-xxxv.
223. —. Variations and nomenclature of Bermudian, West Indian, and Brazilian Reef Corals, with notes on various Indo-Pacific Corals. T. c. pp. 63-168.
224. —. The Bermuda Islands. Op. cit. xi (2), pp. 413-913.
225. —. Notes on Corals of the genus *Acropora* (*Madrepora* Lam.) with new descriptions and figures of types, and of several new species. Op. cit. xi (1), pp. 207-266, pls. xxxvi A-xxxvi F.

226. VOELTZKOW, A. Bericht über eine Reise nach Ostafrika zur Untersuchung der Bildung und des Aufbaues des Riffe und Inseln des westlichen indischen Ozeans. III. Mafia und Sansibar. IV. Die Comoren. Zeit. Ges. Erd. Berlin 1904, pp. 274-301.
Review by MAY, Zool. Zentrbl. xi, pp. 435-437.
227. VOLZ, W. Zur Geologie von Sumatra. Beobachtungen und Studien. Geol. Pal. Abh. vi (2) 1904. [*Cœlenterata*, pp. 100-110.]
228. WALTHER, J. Die Fauna der Solnhofener Plattenkalke bionomisch betrachtet. Denk. Ges. Jena 1904, pp. 133-214, pl. viii, 21 text-figg. [*Cœlenterata*, pp. 161-164, fig. 13.]
- ✓ 230. WHITEAVES, J. F. Description of a new genus and species of rugose corals from the Silurian Rocks of Manitoba. Ottawa Natural. xviii, pp. 113 & 114.
231. WILSON, E. B. Mosaic development in the Annelid egg. Science xx, pp. 748-750. [Includes reference to *Cœlenterata*.]
232. WOLLEMANN, A. Ein Aufschluss im Mukronatensenon bei Rotenkamp, nordwestlich von Königslutter. XIII. Jahresber. Ver. Braunschweig, pp. 40-42.
233. WOLTERECK, R. Ueber die Entwicklung der *Veella* aus einer in der Tiefe vorkommenden Larve. Erste Mt. über die Tiefenplankton-Fänge der Zoologischen Station in Villefranche. Zool. Jahrb. Suppl. vii, pp. 347-372, pls. xvii-xix, 6 figg.
234. WOLTERSTORFF, W. Beiträge zur Fauna der Tucheler Heide. Bericht über eine zoologische Bereisung der Kreise Tuchel und Schwetz im Jahre 1900. Schr. Ges. Danzig xi, 1 & 2, pp. 140-234, 1 pl. 1904.
- ✓ 235. WOOD, ELVIRA. Marcellus (Stafford) limestones of Lancaster, Erie Co. N. Y. Rep. N. York Mus. lv, pp. 139-181. [*Cœlenterata*, pp. 154 & 155.]
236. WOOD, ETHEL M. R. The Graptolites of the Lower Ludlow Shales. P. Geol. Ass. xviii (9), pp. 446-451.
237. YAKOVLEVA, N. O morfologhii i morfogenii korallovzh ghruppzhi *Rugosa*. Bull. Lab. St. Petersb. vii, 2, pp. 87-101, 7 figg.
238. YERKES, R. M. The reaction-time of *Gonionemus murbachii* to electric and photic stimuli. Biol. Bull. vi, pp. 84-95. [Review, p. 324.]
239. YOKOYAMA, M. On some Jurassic fossils from Rikuzen. J. geol. Soc. Tokyo xi, p. 105. [In Japanese.]
- ✓ 240. ZELIZKO, J. V. Notiz über die Korallen des Mittelböhmischen Obersilur aus dem Fundorte "V. Kozle." Verh. geol. Reichsanst. 1904, pp. 304-306.

I. GENERAL

(i.e. works relating to *Cœlenterata* collectively).

[The following memoirs refer to *Cœlenterata* collectively:—CARLGREN (21), CAULLERY & MESNIL (23), GINESTE (73), HICKSON (101), HUBRECHT (109), HUDLESTON (111), LAUTERBORN (140), LUTHER (147), MICHAELSEN (159), ROHDE (187).]

SUBJECT INDEX (to General).

GENERAL BIOLOGY AND GEOGRAPHY.

- Review of literature for 1894, CARLGREN (21).
 Histology, structure of the cell, ROHDE (187).
 Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (73).
 Organogenesis and histogenesis from the point of view of phylogeny, GINESTE (73).
 Variation and regeneration, HICKSON (101).
 Affinities of *Cœlenterata* discussed, MICHAELSEN (159).
 Cœlenterate affinities to the *Actinomyxidae*, CAULLERY & MESNIL (23).
 Relationships of invertebrates, HUBRECHT (109).
 Finland, plankton collections, LUTHER (147).
 Upper Rhine, collections, LAUTERBORN (140).

II. HYDROMEDUSÆ (or HYDROZOA).

[The following memoirs relate to *Hydromedusæ*:—ANNANDALE (7), BANCROFT (9), BILLARD (12, 13), BOGATIREW (14), BORING (16), BROWNE (18), CHILD (24), DADAY (31), GILSON (72), GODLEWSKI (75), GÖRICH (76), GORKA (77), GOTO (79), GRAVIER (82), GUENTHER (84), HARGITT (90-95), HARTLAUB (96), HOLMGREN (108), HURRELL (115), ISELE (117), JÄDERHOLM (118, 119), JENNINGS (123), JUKES-BROWNE (124), KING (127), LOEB (144), LOPPENS (145, 146), MARTIN (153), MAYER (154, 155), MAXWELL (156), MOORE (160), MORGAN (162, 163), NOBRE (166, 167), NUTTING (169, 170), PARKES (173), PERKINS (174, 175), SCHEPOTIEFF (198), SCHULTZ (200, 201), SWENANDER (206), THOMSON (207), TORREY (209), TRUE (214), ULRICH & VAUGHAN (216), VERRILL (220), VOLZ (227), WOLTERECK (233), YERKES (238), MARINE BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY.

- Morphology of *Hydromedusæ*, PERKINS (174).
 Histology of cylindrical epithelial cells, HOLMGREN (108).
 Comparative study of muscular tonus, MAXWELL (156).
 Asymmetry and its significance, JENNINGS (123).
 Double reproduction in the medusa, *Hybocodon prolifera*, PERKINS (175).
 Reaction time of *Gonionemus murbachii* to electric and photic stimuli, Biol. Bull. vi, pp. 84-95 & 324.
 Artificial sea-waters as tested on *Gonionemus* in aquaria, TRUE (214).
 Regeneration in *Tubularia* and *Hydra*, SCHULTZ (201).
 Regeneration, MORGAN (163).
 Regeneration in *Tubularia*, MORGAN (162).
 Influence of the reaction of sea-water on regeneration and growth of Tubularians, LOEB (144).
 Regeneration in *Tubularia crocea*, KING (127).
 Closure of longitudinally split stems in *Tubularians*, BORING (16).
 Regulation experiments in *Tubularia mesembryanthemum*, GODLEWSKI (75).
 Multiplication, regeneration, graftings and variation, BILLARD (12).
 Form-regulation, CHILD (24).

- Budding tentacles of *Gonionemus*, HARGITT (95).
 Spermatogenesis in *Hydra*, GUENTHER (84).
 Development of the hydranth, BILLARD (13).
 Development of *Eudendrium*, HARGITT (91).
 Development of *Verella*, WOLTERECK (233).

GEOGRAPHY.

- Antarctic regions, n. spp., JÄDERHOLM (119).
 Antarctic *Siphonophora*, THOMSON (207).
 Norway, collections, HARTLAUB (96).
 Drontheim, collections, SWENANDER (206).
 Azores, collections, JÄDERHOLM (119).
 †Ural, Devonian forms, BOGATIREW (14).
 †England, upper chalk, Cretaceous forms, JUKES-BROWNE (124).
 Plymouth, n. spp., BROWNE (18).
 Cork coast, *Verella spiralis*, MARTIN (153).
 Belgium, collections, LOPPENS (145).
 †Bohemia, faunistic, ISEKLE (117).
 Bay of Naples, n. spp., HARGITT (90).
 North and South Portugal, marine fauna, NOBRE (166, 167).
 Madeira, South Atlantic, South Africa, n. spp., JÄDERHOLM (118).
 Africa, Lakes Tanganyika and Victoria Nyanza, occurrence of jelly-fish, MOORE (160).
 Victoria Nyanza, *Limnocyda* spp., GRAVIER (82).
 American *Sertulariidae*, monograph, NUTTING (170).
 †Maryland, n. spp., ULRICH & VAUGHAN (216).
 †Hudson Bay Slope, Devonian rocks, n. gen., n. sp., PARKES (173).
 Long Island Sound, n. sp., HARGITT (94).
 California, collections, JÄDERHOLM (118).
 San Diego, n. spp., TORREY (209).
 Valparaiso, Brazil, Patagonia, Straits of Magalhaen, collections, JÄDERHOLM (118).
 Indian Seas, occurrence of *Porpita*, ANNANDALE (7).
 Indian Ocean, India, Antilles, Java, n. spp., JÄDERHOLM (118).
 Bahamas, medusæ, n. gen. and sp., MAYER (154).
 Bahamas, the medusa fauna, MAYER (155).
 Bermudas, n. spp., VERRILL (220).
 Japan, n. spp., GOTO (79).
 South Japan, Hongkong, n. sp., JÄDERHOLM (118).
 †Sumatra, n. sp., VOLZ (227).
 Hawaiian Islands, gymnoblastic hydroids, NUTTING (169).

SYSTEMATIC.

- Hydroids*, gynoblastic forms from the Hawaiian Islands, NUTTING, Science xix, p. 217.
Abietinaria abietina, p. 114, pl. xxxii, figg. 1-3, *A. variabilis*, p. 115, figg. 4-7, *A. inconstans*, p. 116, pl. xxxiii, figg. 1 & 2, *A. coli*, p. 117, figg. 3-5, *A. filicula*, p. 117, pl. xxxiv, fig. 1, *A. traski*, p. 118, pl. xxxiii, figg. 6-11, *A. anguina*, p. 119, pl. xxxiv, figg. 5-7, *A. compressa*, p. 120, pl. xxxv, figg. 3 & 4, *A. greeniei*, p. 121, pl. xxxvi, figg. 1-8, *A. costata*, p. 122, pl. xxxvi, figg. 9-12, *A. annulata*, p. 122, figg. 13-15, *A. turgida*, pl. xxxvii, figg. 1 & 2, *A. gigantea*, p. 123, figg. 3-5, NUTTING, Special Bull. U. S. Mus. 1904.

† Refers to fossil forms.

- A. amphora*, p. 119, pl. xxxiv, figg. 2-4, *A. alexanderi*, p. 120, pl. xxxv, figg. 5-8, NUTTING, t. c. **n. spp.**
- Aglaophenia cylindrata*, Antilles, JÄDERHOLM, Arkiv Zool. i (3), p. 297, pl. xiv, fig. 2.
- A. heterodonta*, S. Africa, p. 296, pl. xiii, figg. 10-12, pl. xiv, fig. 1, *A. antarctica*, Straits of Magalhaen, p. 295, pl. xiii, figg. 8 & 9, JÄDERHOLM, t. c. **n. spp.**
- Aglaura hemistoma*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 26, pl. iv, fig. 34.
- Algina rhodina*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 27, pl. iv, figg. 28 & 29.
- Amphinema n. sp.*, Plymouth, BROWNE, J. Inst. Cornwall xvi, i, p. 124.
- Antennularia perrieri*, multiplication, regeneration, graftings and variation, BILLARD, Ann. Sci. nat. (8) xx, p. 217, **n. sp.**
- Bimeria gracilis*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 6, fig. 1.
- Bougainvillia niobe*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 11, pl. ii, figg. 14 & 15.
- B. gloriotta*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 7, figg. 2 & 3, **n. sp.**
- Campanularia flexuosa*, development of hydranth, BILLARD, C.R. Ac. Sci. cxxxix, 2, pp. 1038-1040.
- C. lennoxensis*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 268, pl. i, figg. 4 & 5; *C. subrufa*, *C. pedunculata*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. v & vi; *C. hesperia*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 12, fig. 4, **n. spp.**
- Cladonema perkinsii*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 18, pl. iv, fig. 35.
- Clytia bakeri*, p. 16, figg. 7-9, *C. hendersoni*, p. 18, figg. 10 & 11, *C. universitatis*, p. 19, figg. 12 & 13, San Diego, TORREY, Univ. Calif. publ. Zool. ii, **n. spp.**
- Corydendrium parasiticum*, Naples, anatomy, development, histology, HARGITT, Mt. Stat. Neapel xvi, 4, p. 577, pl. xxii, figg. 30 & 31.
- Cubaua aphrodite*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 21, pl. v, figg. 43-49.
- Cunocantha* sp., Bahamas, MAYER, t. c. p. 27, pl. iv, figg. 36-42.
- Dictyocladium flabellum*, NUTTING, Special Bull. U. S. Mus. 1904, p. 105, pl. xxviii, figg. 1 & 2, **n. sp.**
- Diphasia rosacea*, p. 107, pl. xxviii, figg. 4 & 5, *D. tamarisca*, p. 108, figg. 6 & 7, *D. fallax*, p. 109, pl. xxix, figg. 2-6, *D. digitalis*, p. 110, pl. xxx, figg. 2-7, *D. corniculata*, p. 112, pl. xxix, fig. 1, *D. kincaidi*, p. 112, pl. xxxi, figg. 7-9; NUTTING, t. c.
- D. tropica*, p. 110, pl. xxx, fig. 1, *D. pulchra*, p. 111, pl. xxxi, figg. 1-3, *D. paarmanni*, p. iii, figg. 4-6, NUTTING, t. c. **n. spp.**
- Diplocheilus allmani*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 36, **n. sp.**
- Epenthesis folleata*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 15, pl. iii, fig. 16.
- Eucheilota paradoxica*, Bahamas, MAYER, t. c. p. 16, pl. iii, figg. 17 & 18, p. vii, fig. 65.
- Eucheilota n. sp.*, Plymouth, BROWNE, J. Inst. Cornwall xvi, i, p. 125.
- Eudendrium ramosum*, *E. capillare*, early development, HARGITT, Zool. Jahrb. Anat. xx, pp. 257-276, pls. xiv-xvi; *E. hyalinum*, Drontheim, SWENANDER, Norske Selsk. Skr. 1903, No. 6, p. 16, fig. 8.
- E. cyathiferum*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. ii, **n. sp.**
- Facelina coronata*, nematoblasts and nematocysts, ABRIC, C.R. Soc. Biol. lvii, pp. 7-9.

- Gemmaria implexa*, Naples, development, anatomy, histology, HARGITT, Mt. Stat. Neapel xvi, 4, p. 575, pl. xxii, figg. 27-29.
- Glossocodon tenuirostris*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 26, pl. iv, fig. 33.
- Gonionemus*, budding tentacles, HARGITT, Biol. Bull. vi, pp. 241-250, 9 figg.; *G.*, comparative study of muscular tonus, MAXWELL, Science xix, p. 249; *G.*, used in aquaria as a test for artificial sea waters, TRUE, Science xix, p. 252; *G. murbachii*, morphology, PERKINS, Science xix, p. 250 & 251; *G. vertens*, GORKA, Allatt. Kozl. Magyar Tars. i, 1902, p. 105, fig. 2; *G. murbachii*, reaction to electric and photic stimuli, YERKES, Biol. Bull. vi, pp. 84-95.
- G. depressum*, Yokohama, GOTO, Mark Anniv. Vol. 1903, New York, p. 12, figg. 10-13, 21 & 22, n. sp.
- Halecium gracile*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 266, pl. i, figg. 2 & 3.
- H. secundum*, *H. pallens*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. iii & iv, n. spp.
- Halicornaria vagæ*, *H. expansa*, South Japan, JÄDERHOLM, Arkiv Zool. i (3), pp. 301-304, pl. xv, figg. 1-7, n. spp.
- Halitiara formosa*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 8, pl. i, fig. 8.
- Hybocodon forbesii*, Bahamas, MAYER, t. c. p. 8, pl. ii, fig. 13; *H. prolifera*, double reproduction, PERKINS, Amer. Natural. xxxviii, p. 516; *H. prolifer*, morphology, PERKINS, Science xix, pp. 250 & 251.
- Hydra*, regeneration, MORGAN, Science xx, pp. 742-748; *H.*, regeneration, SCHULTZ, Biol. Centrbl. xxiv, pp. 310-317; *H. fusca*, Turkestan, DADAY, Zool. Jahrb. Syst. xxi, pp. 469-554, pls. xxvii-xxx, 5 figg.; *H. viridis*, spermatogenesis, GUENTHER, Zool. Jahrb. Suppl. vii, pp. 139-160, pl. xi.
- Hydractinia californica*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 9; †*H. multispinosa*, Maryland, ULRICH, Maryland geol. Surv. 1904, p. 433, pl. cxxi, figg. 1-9, n. spp.
- Hydrallmania falcata*, p. 124, pl. xxxviii, figg. 1-4, *H. distans*, p. 126, figg. 5-9, *H. franciscana*, p. 126, fig. 10, NUTTING, Special Bull. U. S. Mus. 1904.
- Lafoëina longithecæ*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. iv, n. sp.
- Lampra socia*, Drontheim, SWENANDER, Norske Selsk. Skr. 1903, No. 6, p. 6, figg. 1-3, n. sp.
- Laodicea ulothrix*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 14, pl. iv, fig. 30.
- Limnocythida sowerbii*, *L. tanganyicæ*, GRAVIER, Bull. Mus. Paris 1903, pp. 347-352.
- Liriope scutigera*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 25, pl. iv, fig. 31.
- Lymnorea alexandri*, Bahamas, MAYER, t. c. p. 10, pl. i, figg. 1-5.
- Lytocarpus gracilicaulis*, South Japan, JÄDERHOLM, Arkiv Zool. i (3), p. 299, pl. xiv, figg. 3 & 4, n. sp.
- †*Milleaster* n. gen. for *M. incrustans*, *M. subramosus* n. spp., ULRICH, Maryland geol. Surv. 1904, pp. 436 & 437, pl. cxxi, figg. 10 & 11.
- †*Myriopora* n. gen. for *M. verbeeki* n. sp., Sumatra, VOLZ, Geol. Pal. Abh. vi, p. 102, figg. 36-45.
- Myrithella austro-georgiæ*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. ii, n. sp.
- Netocertoides brachiatum*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 12, pl. i, fig. 7.
- Obelia* sp. Bahamas, MAYER, t. c. p. 16, pl. iii, figg. 19 & 20.
- O. austro-georgiæ*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes

- (4) iii, p. vii; *O. corona*, San Diego, TORREY, Univ. Calif. publ. Zool. v, p. 14, figg. 5 & 6 : **n. spp.**
- Ocania mcCradyi*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 15, pl. iii, figg. 23 & 24.
- Olindias tenuis*, Bahamas, MAYER, t. c. p. 23, pl. v, figg. 50-52, pl. vi, figg. 53-59.
- Olindioides* **n. gen.** for *O. formosa* **n. sp.**, Japan, GOTO, Mark Anniv. Vol. 1903, p. 3, figg. 1-9, 14-20.
- Pachycordyle weismanni*, anatomy, histology, Naples, HARGITT, Mt. Stat. Neapel xvi, 4, p. 553, pl. xxi, figg. 1-8, **n. sp.**
- Parvanemus* **n. gen.** for *P. degeneratus* **n. sp.**, Bahamas, MAYER, Mem. Mus. Brooklyn i, 1, p. 6, pl. iii, fig. 22.
- Pasythea quadridentata*, NUTTING, Special Bull. U. S. Mus. 1904, p. 75, pl. xiii, figg. 4-7.
- Perigonimus napolitanus*, Naples, development and structure, HARGITT, Mt. Stat. Neapel xvi, 4, p. 571, **n. sp.?**
- Phortis pyramidalis*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 17, pl. iii, fig. 25.
- Plumularia curvata*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. xiii, **n. sp.**
- Polyorchis penicillata*, galvanotropic reactions, BANCROFT, Univ. Calif. publ. Physiol. ii, pp. 43-46, 4 figg.
- Porpita* in the Indian Seas, ANNANDALE, Nature lxx, p. 531.
- Schizotrichia anderssoni*, *S. antarctica*, Antarctic regions, JÄDERHOLM, t. c. pp. xi & xii, **n. spp.**
- Selaginopsis mirabilis*, p. 128, pl. xxxviii, figg. 11 & 12, *S. pinaster*, p. 128, fig. 13, *S. triserialis*, p. 129, pl. xxxix, figg. 1 & 2, *S. cedrina*, p. 130, *S. pinnata*, p. 130, pl. xxxix, fig. 6, *S. cylindrica*, p. 131, figg. 7 & 8, *S. obsoleta*, p. 132, pl. xxxix, figg. 4 & 5, *S. alternitheca*, p. 133, pl. xl, figg. 5 & 7, NUTTING, Special Bull. U. S. Mus. 1904.
- S. plumiformis*, p. 129, pl. xxxix, fig. 3, *S. ornata*, p. 131, pl. xl, figg. 1-3, *S. hartlaubii*, p. 133, fig. 8, NUTTING, t. c.; *S. pachyclada*, *S. affinis*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. x & xi, **n. spp.**
- Sertularella halecina*, *S. turgida*, San Diego, anatomy, affinities, TORREY, Univ. Calif. publ. Zool. ii, pp. 26-29, figg. 14-18, 22 & 23; *S. conica*, p. 79, pl. xv, figg. 1 & 2, *S. catena*, p. 80, fig. 3, *S. quadrata*, figg. 4-6, *S. geniculata*, p. 81, pl. xvi, fig. 2, *S. patagonica*, p. 81, fig. 3, *S. rugosa*, p. 82, pl. xvii, figg. 1-5, *S. tenella*, p. 83, pl. xviii, fig. 1 & 2, *S. allmani*, p. 84, figg. 3-6, *S. contorta*, p. 85, figg. 7-9, *S. lata*, p. 85, fig. 10, *S. alvida*, p. 86, pl. xix, figg. 1 & 2, *S. pinnigera*, p. 86, fig. 3, *S. cylindritheca*, p. 87, fig. 4, *S. gigantea*, fig. 7, *S. distans*, p. 88, fig. 56, *S. amphorifera*, pl. xx, figg. 1 & 2, *S. fusiformis*, p. 89, figg. 3 & 4, *S. picta*, p. 90, figg. 5-7, *S. polygonalis*, pl. xxi, figg. 1 & 2, *S. clausa*, p. 93, figg. 3 & 4, *S. pinnata*, p. 94, figg. 10-12, *S. margaritacea*, p. 95, pl. xxii, fig. 1, *S. turgida*, p. 95, figg. 2-5, *S. sieboldi*, p. 96, figg. 6 & 7, *S. subdichotoma*, p. 96, figg. 8-12, *S. filiformis*, p. 97, pl. xxiii, figg. 1-3, *S. quadrifida*, p. 97, figg. 4-7, *S. milneana*, p. 98, pl. xxiv, figg. 2-5, *S. magellanica*, p. 99, figg. 6-8, *S. dentifera*, p. 100, pl. xxv, figg. 1-7, *S. tricuspidata*, figg. 3-7, *S. tropica*, p. 102, pl. xxvi, figg. 3 & 4, *S. clarkii*, p. 102, pl. 5, *S. episcopus*, p. 103, fig. 7, *S. formosa*, p. 104, pl. xxvii, figg. 2-4, *S. nana*, p. 105, pl. xxvi, fig. 6, synonymy, anatomy, NUTTING, Special Bull. U. S. Mus. 1904.
- S. pedrensis*, San Diego, TORREY, t. c. p. 27, figg. 19-21; *S. plana*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 279, pl. xii, fig. 9, pl. xiii, figg. 1 & 2; *S. pulchella*, *S. glacialis*, *S. elongata*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. viii-x; *S. tanneri*, p. 81, pl. xvi, fig. 1, *S. areyi*, p. 83, pl. xvii, fig. 6, *S. solitaria*, p. 89, pl. xx, figg. 10 & 11,

- S. megastoma*, p. 90, pl. xx, figg. 8 & 9, *S. complexa*, p. 94, pl. xxi, figg. 5-9, *S. meridionalis*, p. 98, pl. xxiii, figg. 8 & 9, *S. elegans*, p. 98, pl. xxiv, fig. 1, *S. minuta*, p. 99, pl. xxiv, figg. 9 & 10, *S. levinseni*, p. 100, pl. xxvi, figg. 1 & 2, *S. magna*, p. 103, pl. xxvii, fig. 1, *S. harilaubi*, p. 104, pl. xxvii, fig. 5, NUTTING, Special Bull. U. S. Mus. 1904: n. spp.
- Sertularia curta*, Indian Ocean, JÄDERHOLM, Arkiv Zool. i (3), p. 285, pl. xiii, figg. 3 & 4, n. sp.
- S. pumila*, p. 51, pl. i, figg. 1-3, *S. operculata*, p. 54, pl. ii, figg. 3-5, *S. pulchella*, p. 55, pl. ii, figg. 6 & 7, *S. bispinosa*, p. 56, pl. ii, figg. 8-11, *S. desmoides*, p. 56, pl. iii, figg. 1-3, *S. gracilis*, p. 57, pl. iii, fig. 10, *S. cornicina*, p. 58, pl. iv, figg. 1-5, *S. brevicirathus*, p. 60, pl. vi, figg. 1 & 2, *S. tumida*, p. 60, pl. vi, fig. 5, *S. exigua*, p. 61, pl. vi, fig. 6, NUTTING, Special Bull. U. S. Mus. 1904.
- S. vershuyi*, p. 53, pl. i, figg. 4-9, *S. challengerii*, p. 54, pl. ii, figg. 1 & 2, *S. rathbuni*, p. 57, pl. iii, figg. 4-9, *S. mayeri*, p. 58, pl. v, figg. 1-4, *S. pourtalesi*, p. 59, fig. 5, *S. stookeyi*, p. 59, figg. 6 & 7, *S. flowersi*, p. 60, pl. vi, figg. 3 & 4, NUTTING, t. c. n. spp.
- Siphonophora*, gonostyles of two Antarctic forms, THOMSON, P. Phys. Soc. Edinb. xvi, pp. 19-22.
- Stomotoca australis*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 9, pl. i, fig. 9.
- Stylactis affinis*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 264, pl. i, fig. 1, n. sp.
- Syncoryne linvillei*, Long Island Sound, HARGITT, Biol. Bull. vii, pp. 251-253, 1 fig.
- Syndictyon angulatum*, Bahamas, MAYER, Mem. Mus. Brooklyn i, 1, p. 7, pl. i, fig. 6.
- Synthecium tubithecum*, p. 134, pl. xli, fig. 1, *S. marginatum*, p. 135, pl. xli, fig. 3, *S. cylindricum*, p. 136, fig. 7, NUTTING, Special Bull. U. S. Mus. 1904; *S. tubithecum* (n. n. for *Sertularia* Allman) Antilles, JÄDERHOLM, Archiv Zool. i (3), p. 291, pl. xiii, fig. 7.
- S. rectum*, p. 135, pl. xli, fig. 2, *S. robustum*, p. 136, figg. 4-6, NUTTING, Special Bull. U. S. Mus. 1904; *S. protectum*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 290, pl. xiii, figg. 5 & 6: n. spp.
- Tetracannota collapsa*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 12, pl. iv, fig. 32.
- Tiara superba*, Bahamas, MAYER, t. c. p. 9, pl. ii, fig. 11.
- Tiarella singularis*, structure, HARTLAUB, Wiss. Meeresuntersuch. v, 2, pp. 97-106, fig. 2.
- Tiaropsis punctata*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 14, pl. iii, fig. 21.
- Thuiaria thuja*, p. 62, pl. vii, figg. 1-3, *T. elegans*, p. 64, pl. vii, fig. 4, *T. robusta*, pl. viii, figg. 5-7, *T. thuiaroides*, figg. 1-6, *T. polycarpa*, p. 65, figg. 7-9, *T. kurilæ*, pl. ix, figg. 1 & 2, *T. lonchitis*, p. 66, figg. 5-8, *T. plumulifera*, p. 67, figg. 9-13, *T. diffusa*, p. 68, pl. x, figg. 1-3, *T. similis*, p. 69, figg. 7-9, *T. tubuliformis*, p. 70, pl. xi, figg. 1-8, *T. tenera*, figg. 9-12, *T. fabricii*, p. 71, pl. xii, figg. 1 & 2, *T. argentea*, p. 71, fig. 3-9, *T. cupressina*, p. 72, pl. xiii, figg. 1-3, NUTTING, Special Bull. U. S. Mus. 1904.
- T. immersa*, p. 66, pl. ix, figg. 3 & 4, *T. dalli*, p. 68, pl. x, figg. 4-6, NUTTING, t. c. n. spp.
- Thyroscyphus torresii*, India, JÄDERHOLM, Arkiv Zool. i (3), p. 273, pl. xii, fig. 6.
- T. repens*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. vii, n. sp.
- †*Tristylotus* n. gen. for *T. hexagonus* n. sp., a remarkable parasite from the Devonian rocks of the Hudson Bay Slope, PARKES, Amer. J. Sci. xviii, pp. 135-140, 6 figg.

- Tubularia* form-regulation, CHILD, *Smithson. Collect.* xlv, pp. 134-143;
T. spp., influence of the reaction of sea-water on the regeneration and growth, LOEB, *Univ. Calif. publ. Physiol.* i, 15, pp. 139-147;
T., regeneration, MORGAN, *Biol. Bull.* vi, pp. 159-172; *T.*, regeneration, SCHULTZ, *Biol. Centrbl.* xxiv, pp. 310-317; *T. mesembryanthemum*, regulation, GODLEWSKI, *Arch. Entwickmeh.* xviii, pp. 111-160, pls. viii & ix, 7 figg.; *T. mesembryanthemum*, development, anatomy, histology, HARGITT, *Mt. Stat. Neapel* xvi, 4, p. 563, pl. xxi, figg. 9-24;
T. crocea, regeneration, KING, *Biol. Bull.* vi, pp. 287-306, 7 figg.;
T. crocea, closure of longitudinally split stems, BORING, *op. cit.* vii, pp. 154-159; *T. regulis*, *T. indivisa*, Drontheim, SWENANDER, *Norske Selsk. Skr.* 1903, No. 6, pp. 8-10, figg. 4-7.
Vetella, development, WOLTERECK, *Zool. Jahrb. Suppl.* vii, pp. 347-372, pls. xvii-xix, 6 figg.; *V. spiralis*, on the Cork Coast, MARTIN, *Irish Natural.* xiii, p. 27.
Willia ornata, Bahamas, MAYER, *Mem. Mus. Brooklyn* i, p. 13, pl. ii, fig. 12.
Zygodactyla cyanea, Bahamas, MAYER, *t. c.* p. 17, pl. iii, figg. 26 & 27.
Zygophylax operculata, Patagonia, JÄDERHOLM, *Arkiv Zool.* i (3), pp. 276-278, pl. xii, figg. 7 & 8, n. sp.

III. GRAPTOLITHIDA.

[The following memoirs refer to *Graptolithida*:—ELLES (53), ELLES & WOOD (54), HALL (87, 88), HOLM (105, 106), ISEERLE (117), LAMPLUGH (138), MALAISE & LESPINEUX (150), NOËL (168), ROESINGER (186), ROUSSEL (193), RUEDEMANN (195, 196, 197), USSING (217), WOOD (235).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

- †Mode of life, ROESINGER (186).
 †Mode of growth and development of *Goniograptus thureauvi*, RUEDEMANN (195).
 †Swedish forms, list of spp. found, HOLM (105).
 †Swedish forms, HOLM (105).
 †Britain, n. spp., history of forms, synonymy, and anatomy, ELLES & WOOD (54).
 †Belfast, spp. found, LAMPLUGH etc. (138).
 †Wales, Arenig Rocks, lists of spp. found and localities, ELLES (53).
 †Lower Ludlow shales, spp., WOOD (235).
 †Denmark, spp. found, USSING (217).
 †Grès Vosgien, Epinal, graptolite fauna, NOËL (168).
 †France, collections, MALAISE & LESPINEUX (150).
 †Pyrenees, collections, ROUSSEL (193).
 †New York, Trenton conglomerate, fauna, RUEDEMANN (197).
 †New York County, spp., RUEDEMANN (196).
 †Victoria, collections, HALL (88).
 †Eastern Victoria, n. spp., HALL (87).

SYSTEMATIC.

- †*Bryograptus* n. sp. [unnamed], RUEDEMANN, *Rep. N. York Mus.* lv, p. 556; †*B.* New York, RUEDEMANN, *t. c.* p. 554 (name only), n. sp.
 †*Dendrograptus* n. sp. [unnamed, undescribed], New York, RUEDEMANN, *t. c.* pp. 555 & 570.

- +*Dicellograptus* spp., ELLES & WOOD, Pal. Soc. Mon. lviii, pp. 135-163, figg. 83-102; *D. complanatus*, p. 139, fig. 84, pl. xx, figg. 1 & 2, **n. var. ornatus**, fig. 85, *D. anceps*, p. 141, pl. xx, fig. 3, *D. divaricatus*, p. 143, pl. xx, fig. 5, **n. var. salopiensis**, p. 145, fig. 7, *D. intortus*, p. 146, fig. 4, *D. patulosus*, p. 147, pl. xxi, fig. 5, *D. pumilus*, p. 149, fig. 3, *D. forchammeri* p. 150, pl. xxii, fig. 1, *D. sextans*, p. 153, pl. xxi, fig. 1, **n. var. exilis**, p. 155, fig. 2, *D. morrisoni*, p. 155, pl. xxi, fig. 6, *D. moffatensis*, p. 157, pl. xxiii, fig. 1, *D. elegans*, p. 159, fig. 2, var. *rigens*, p. 161, fig. 3, *D. caducens*, p. 161, fig. 4, Britain, ELLES & WOOD, t. c.
- +*D. angulatus*, Britain, ELLES & WOOD, t. c. p. 149, pl. xxi, fig. 4, **n. sp.**
- +*Dicranograptus clingani*, p. 165, pl. xxiv, fig. 1, *D. tardiusculus*, p. 167, fig. 2, *D. rectus*, p. 160, fig. 4, *D. nicholsoni*, p. 171, pl. xxv, fig. 1, *D. ramosus*, p. 167, pl. xxiv, fig. 6, *D. ziczac*, p. 177, pl. xxv, fig. 3, *D. furcatus* var. *minimus*, p. 179, pl. xxv, fig. 4, Britain, ELLES & WOOD, t. c.
- +*D. brevicaulis*, p. 168, pl. xxiv, fig. 3, *D. celticus*, p. 170, pl. xxiv, fig. 5, *D. cyathiformis*, p. 174, pl. xxv, fig. 2, Britain, ELLES & WOOD, t. c. **n. spp.**
- +*Dictyonema* **n. spp.** [unnamed, undescribed], New York, RUEDEMANN, Rep. N. York Mus. lv, pp. 555 & 570.
- +*Didymograptus (Leptograptus)* **n. sp.** [unnamed], mode of growth, RUEDEMANN, t. c. p. 589, fig. 17.
- +*D. ovatus*, Victoria, HALL, Rec. geol. Surv. Victoria i, p. 33, fig. 1, **n. sp.**
- +*Callograptus* sp., Victoria, HALL, t. c. fig. 1.
- +*Climacograptus scharenbergi*, New York, RUEDEMANN, Rep. N. York Mus. lv, p. 11, pl. iii, fig. 1; *C. scalaris*, USSING, Danmarks geol. Unders. iii, 2, p. 58, fig. 3; *C. scalaris*, HOLM, Sveriges Geol. Afh. 172, p. 62, fig. 57.
- +*C. n. sp.* [unnamed], New York, RUEDEMANN, Rep. N. York Mus. lv, p. 571.
- +*Clonograptus (Goniograptus)*, RUEDEMANN, Rep. N. York Mus. lv, p. 582, fig. 12, **n. sp.**
- +*Cenograptid* **n. gen.** and **n. sp.** [unnamed], RUEDEMANN, t. c. p. 566.
- +*Cenograptus gracilis*, mode of growth, RUEDEMANN, t. c. p. 583, fig. 13.
- +*Cyrtograptus murchisoni*, USSING, Danmarks geol. Unders. ii, 2, p. 59, fig. 18.
- +*Glossograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, pp. 571 & 555; *G. hermani*, Victoria, HALL, Rec. geol. Surv. Victoria i, 1, p. 34, fig. 2, **n. sp.**
- +*Goniograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, p. 556.
- +*G. thureau*, mode of growth and development, RUEDEMANN, t. c. pp. 576-592, 19 figg.
- +*Graptolithus* **n. sp.** [unnamed], ISELE, SB. Bohmisch. Ges. 1903, xxix, p. 7.
- +*Leptograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, p. 570.
- +*Monograptus leptotheca*, p. 61, fig. 56, *M. priodon*, p. 63, fig. 59, HOLM, Sveriges geol. Unders. Afh. 172; *M. bohemicus*, *M. nilssoni*, *M. priodon*, France, MALAISE & LESPINEUX, Ann. Soc. geol. Belgique xxxi, 3, pp. 140 & 141; +*M. spp.*, Lower Ludlow Shales, WOOD, P. Geol. Ass. xviii (9), pp. 446-451.
- +*Phyllograptus angustifolius*, HOLM, Sveriges geol. Unders. Afh. 172, p. 37, fig. 31; *P. ilicifolius*, mode of growth, RUEDEMANN, Rep. N. York Mus. lv, p. 590, fig. 19.
- +*Ptilograptus* sp., HALL, Rec. geol. Surv. Victoria i, 3, fig. 2.
- +*Rastrites peregrinus*, USSING, Danmarks geol. Unders. ii, 2, p. 58, fig. 4.
- +*Retiolites* spp., Lower Ludlow Shales, WOOD, P. Geol. Ass. xviii (9), pp. 446-451; *R. glinitzianus*, HOLM, Sveriges geol. Unders. Afh. 172, p. 62,

- fig. 58; *R. glinitzianus*, USSING, Danmarks geol. Unders. ii, 2, p. 58, fig. 5.
 +*Tetragraptus quadribachiatus*, *T. fruticosus*, HOLM, Sveriges geol. Unders. Aft. 172, p. 39, figg. 33 & 34; *T. fruticosus*, p. 588, figg. 15 & 16, *T. bigsbyi*, p. 590, fig. 18, mode of growth, RUEDEMANN, Rep. N. York Mus. lv.

IV. SCYPHOZOA.

[The following memoirs refer to *Scyphozoa*:—GILSON (72), GÖRICH (76), HARGITT (93), HUENE (112), MAYER (154), NOBRE (166, 167), RETZIUS (183).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

- Regeneration in *Scyphomedusæ*, HARGITT (93).
 Spermatogenesis in *Aurelia aurita*, GÖRICH (76).
 +Sweden, lower Silurian forms, HUENE (112).
 North and South Portugal, marine fauna, NOBRE (166, 167).
 Bahamas, medusæ, MAYER (154).

SYSTEMATIC.

- Scyphomedusæ*, regeneration, HARGITT, Amer. Natural. xxxviii, pp. 517–519.
Aurelia aurita, spermatogenesis, GÖRICH, Zeitschr. wiss. Zool. lxxvi, pp. 522–543, pl. xxxi.
Cyanea capillata, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 28, pl. xiii, figg. 1–3.
 +*Laotira silurica*, Sweden, HUENE, Centrbl. Mineral. 1904, p. 460, fig. 6, n. sp.
Tamoya haplonema, adult and young, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 28, pl. vii, figg. 61–64.

V. ANTHOZOA.

[The following memoirs refer to *Anthozoa*:—ABRIC (5), BEMMELEN (11), BOGATIREW (14), BOLTON (15), BRANNER (17), BROWNE (18), CAPEDE (19), CARLGREN (20), CARY (22), CHILD (24 & 25), COOK (27), COUFFON (28), CROSSLAND (29), DACQUÉ (30), DAINELLI (32 & 33), DAVENPORT (34), DENNANT (35 & 38), DESTINEZ (39–44), DIENER (46), DOLLFUS (47), DUERDEN (49–52), ETHERIDGE (56), FELIX (58–61), FOERSTE (62 & 63), FORREST (64), FOURTEAU (65), FOX (66), FOX-STRANGWAYS (67), GARDINER (68–71), GILSON (72), GIRTY (74), GORKA (77), GRABAU (80), GRAVIER (81), GREGORY (83), GUPPY (85), GÖRICH (86), HALL (87), HARGITT (92), HEICKE (99), HICKSON (100 & 101), HINDE (103), HOLMES (107), HUNTER (113), JAHN (120), JANENSCH (121), JANOVER (122), JUKES-BROWNE (124), JUNGENSEN (125), KINGSLEY (128), KINKELIN (129), KISHINOUE (130), KITAHARA (131), KNIPOWITSCH (133), KOFORD (134), KREMPF (136), KÜKENTHAL (137), LAWSON (141), LHOMME (142), MARENZELLER (152), MAYER (154), McMURRICH (157), MORGAN (161), MUNTHE (164), NOBRE (166 & 167), D'OSSAT (171), POLÉNOFF (176), PRATT (177), REMEŠ (180), RENZ (182), RETZIUS (183), RICHE (184), RICHET (185), ROULE (189–192), ROUSSEL (193), ROWE (194), RUEDEMANN (197), SCHEPOTIEFF (198), SMYČKA (203), SOBOLEW (204), TORREY (208 & 211), TOULA (212), TRINCI (213), TRUE (214), ULRICH & VAUGHAN (216), VAUGHAN (219), VERRILL (220–225), VOLZ (227), WALTHER (228), WHITEAVES (230), WOOD (235), YAKOVLEVA (237), ZELIZKO (240), MAR. BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY.

- Morphology and development of recent and fossil corals, DUERDEN (49).
 Morphology of the *Madreporaria*, septal sequence, DUERDEN (51).
 Morphology and morphogeny of the rugose corals, YAKOVLEVA (237).
 Structure and growth of corals, MORGAN (161).
 Anatomy, adult colony, larva, young polyp, *Siderastrea radians*, DUERDEN (52A).
 Anatomy of the genus *Acropora*, with descriptions of new species, VERRILL (225).
 Structure and affinities of *Porosphaera*, HINDE (103).
 †Anatomy of n. gen. & sp. *Paronipora penicillata*, CAPEDER (19).
 Notes on a peculiar larva, probably of *Amophyllactis* sp., CARY (22).
 Polymorphism in *Pennatulida*, HICKSON (100).
 Septal sequence in *Siderastræa*, DUERDEN (50).
 Artificial sea waters as tested in aquaria on *Metridium*, TRUE (214).
 Chemical composition of some Gorgonian corals, COOK (27).
 Poison of *Actiniæ*, RICHET (185).
 Chemical action of nematoblast alone explains functioning of nematocyst, ABRIC (5).
 On the habits and reactions of *Sagartia davisii*, TORREY (211).
 Assimilation and nutriment in *Alcyonium digitatum*, PRATT (177).
 Reactions to temperature and geotropism on *Mnemiopsis*, HUNTER (113).
 Variation in the stripes of *Sagartia luciae*, DAVENPORT (34).
 Transformation of dorsal tentacle, *Madreporinæ* and *Oculinæ*, KREMPF (136).
 Regeneration and non-sexual reproduction in *Sagartia davisii*, TORREY & MERY (211).
 Form-regulation in *Cerianthus*, CHILD (24 & 25).
 Correlation between regeneration and symmetry, CARLGREN (20).
 Formation of coral reefs, GARDINER (70).
 Coral reefs, FORREST (64).
 †Paleozoic coral reefs, GRABAU (80).
 Development and affinities of the *Tetracoralla*, DUERDEN (52).
 Maturation, fertilization, early cleavage, formation of ectoderm and endoderm in *Pennaria tiarella*, HARGITT (92).
 Variations and nomenclature of corals from Bermudas, West Indies and Brazil, VERRILL (223).
 Classification, ROULE (189).
 Classification ; position of *Antipathariæ*, ROULE (190).
 Basis of classification and variation in corals, GARDINER (69).

GEOGRAPHY.

- Various stations, corals, Valdivia Exp., MARENZELLER (152A).
 Iceland, Greenland, Færoe Islands, *Pennatulidæ*, JUNGENSEN (125).
 †Tomsk, collections, POLÉNOFF (176).
 — †Ural, Devonian forms, 6 n. spp., 1 n. gen., BOGATIREW (14).
 — †Jura chalk, n. spp., FELIX (61).
 — †Krakau, Devonian collections, GÜRICH (86).
 — †Gotland, Silurian, list of spp. found, MUNTHE (164).
 — †Devonian forms, SMYČKA (203).
 — †England, upper chalk, Cretaceous forms, JUKES-BROWNE (124).
 — †Surrey, collections, HOLMES (107).

- +Scarborough, Oolitic and Cretaceous forms, FOX-STRANGWAYS (67).
- +Lancashire coal measures, spp. found, BOLTON (15).
- +Avon section, corals, VAUGHAN (219).
- +Cornwall, north coast forms, FOX (66).
- +Solenhofen, fauna, WALTHER (228).
- +Central Bohemia, 3 spp. from the Upper Silurian, ZELIZKO (240).
- +Eastern Bohemia, Chalk fossils, JAHN (125).
- +Corniche Alps, Paleozoic forms, n. spp., D'OSSAT (171).
- +South Dalmatia, collections, RENZ (182).
- +Dalmatia, n. spp., DAINELLI (32).
- +Dalmatia, Eocene fossils, DAINELLI (33).
- +Silstria, collections, TOULA (212).
- +Pyrenees, collections, ROUSSEL (193).
- +Portugal, n. spp., FELIX (59).
- North and South Portugal, marine fauna, NOBRE (166 & 167).
- +Egypt, Cretaceous, FOURTEAU (65).
- +Egypt, tertiary, FELIX (60).
- Red Sea, n. spp., KÜKENTHAL (137).
- +Somaliland, collections, DACQUÉ (30).
- Zanzibar and East Africa, coral formations, CROSSLAND (29).
- +New York, Trenton conglomerate, fauna, RUEDEMANN (197).
- +New York, limestone fossils, WOOD (235).
- +Maryland, n. spp., ULRICH & VAUGHAN (216).
- +Southern Indiana, collections, FOERSTE (62).
- +Colorado, Carboniferous, n. sp., GIRTY (74).
- +Tennessee and Kentucky, collections, FOERSTE (63).
- +Manitoba, Silurian, n. gen. & n. sp., described, WHITEAVES (230).
- +Southern Indiana, list of Silurian corals, FOERSTE (62).
- Mexico and Central America, n. spp., MARENZELLER (152).
- Gulf of California, n. sp., GRAVIER (81).
- +California, fossil corals, LAWSON (141).
- Brazil, coral reefs, BRANNER (17).
- Chili, n. spp., McMURRICH (157).
- Japan, coral fishery, KITAHARA (131).
- Bermudas, n. spp., VERRILL (221).
- Bermudas, West Indies and Brazil, n. spp., VERRILL (222).
- Bahamas, medusæ, MAYER (154).
- Indian region, coral reefs, GARDINER (69).
- +Sumatra, n. spp., VOLZ (227).
- +Australian Tertiaries, n. spp., DENNANT (35).
- South Australia and Victoria, recent corals, n. spp., DENNANT (36).
- +Queensland and Western Australia, fossil fauna, GREGORY & DAINTREE (83).
- +Victoria, list of fossils, p. 304, HALL (87).

SYSTEMATIC.

Anthozoa, classification, ROULE, Bull. Mus. Monaco 1904, 16, 3 pp.

Acroporidae n. fam. for *Acropora muricata*, Bermudas, VERRILL, Tr.

Connect. Ac. xi (1), p. 165, pl. xxxii, fig. 1.

Acropora acervata, p. 220, pl. xxxvi, fig. 17, pl. xxxvi, B, fig. 8, *A. appressa*, p. 222, pl. xxxvi, D, fig. 4, E, fig. 4, *A. austera*, p. 226, pl. xxxvi, fig. 10, B, fig. 1, *A. diffusa*, *A. digitifera*, *A. effusa*, pp. 228 & 229, pl. xxxvi, figg. 12, 16, C, fig. 2, F, fig. 16, B, fig. 3, B, fig. 7, *A. microphthalma*, p. 232, C, fig. 1, F, fig. 15, *A. proluxa*, p. 237, pl. xxxvi, fig. 3, A, fig. 3, F, fig. 14, *A. tubigera*, p. 239, pl. xxxvi, figg. 1 & 2, A, figg. 1 & 2, F, fig. 8, *A. tumida* p. 241, pl. xxxvi, fig. 11, B, fig. 2, F, fig. 3, *A. turbinata*,

- p. 242, pl. xxxvi, fig. 6, A, fig. 6, F, fig. 2, *A. secale*, p. 244, pl. xxxvi, fig. 14, B, fig. 5, *A. pumila*, p. 250, pl. xxxvi, fig. 5, A, fig. 5, D, fig. 9, *A. striata*, p. 251, pl. xxxvi, fig. 4, A, fig. 4, F, fig. 7, *A. symmetrica*, p. 254, pl. xxxvi, fig. 8, A, fig. 8, *A. acuminata*, p. 260, *A. ehrenbergii*, pl. xxxvi, D, figg. 5 & 6, E, figg. 2 & 3, F, fig. 11, Bermudas, VERRILL, Tr. Connect. Ac. xi (1); *A.*, composition, with descriptions of new species, VERRILL, t. c. pp. 207-266, 6 pls.
- A. dissimilis*, p. 226, pl. 36, fig. 9, pl. 36, A, fig. 9, *A. indurata*, *A. luzonica*, pp. 230 & 231, pl. 36, figg. 19, 36, C, figg. 4, 6, F, figg. 12, 9, *A. pachycyathus*, p. 236, pl. 36, fig. 20, C, fig. 5, F, fig. 6, *A. stellulata*, p. 238, pl. 36, C, fig. 3, F, p. 10, *A. bandensis* n. n. for *Madrepora tubigera* Quelch, p. 241, *A. secaloides*, *A. fraterna*, *A. wardii*, pp. 244-248, pl. 36, figg. 13, 15, 18, B, figg. 6, 9, 4, F, fig. 4, *A. neglecta*, p. 250, pl. xxxvi, fig. 21, *A. urceolifera*, p. 251, D, fig. 3, *A. cytherella*, p. 253, pl. 36, fig. 7, *A. paniculata*, p. 259, pl. 36, D, figg. 7, 10, Bermudas, VERRILL, t. c.
- †*Actinacis remeši*, structure, FELIX, Vestnik. Klub. Prostejove 1904, vi, p. 110, 2 figg., n. sp.
- Actinia*, correlation between regeneration and symmetry, CARLGREN, Svenska Ak. Handl. xxxvii, 8, 105 pp., 11 pls., 23 text-figg.; *Actinia*, poison of, RICHET, C.R. Soc. Biol. lvi, pp. 302 & 303.
- A. melanaster*, Bermudas, VERRILL, op. cit. xi (1), p. 51, pl. vi, figg. 2 & 3, n. sp.
- Actinia equina*, functioning of nematocysts, ABRIC, C.R. Soc. Biol. lvi, pp. 1008-1010; *A. bermudensis*, VERRILL, Tr. Connect. Ac. x (2), p. 558, pl. lxvii, fig. 7.
- Actinoides pallida*, VERRILL, op. cit. x (2), p. 558, pl. lxviii, fig. 4.
- Actinostola chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 247, figg. 30-33, n. sp.
- Actinotryx sancti-thomæ*, VERRILL, Tr. Connect. Ac. x (2), p. 555, pl. lxviii, fig. 5.
- Agaricia fragilis*, p. 142, pl. xxvi, fig. 1, *A. agaricites*, p. 146, pl. xxvi, figg. 2 & 3, pl. xxvii, figg. 1-3, 5-7, *A. purpurea*, p. 149, pl. xxvii, fig. 4, Bermudas, VERRILL, op. cit. xi (1).
- A. crassa*, p. 145, pl. xxx, fig. 6, pl. xxxiv, fig. 2, *A. nobilis*, p. 150, pl. xxviii, figg. 1 & 2, Bermudas, VERRILL, t. c. n. spp.
- Aiptasia tagetes*, VERRILL, t. c. p. 49, pl. vi, fig. 6; *A. annulata*, *A. tagetes*, Bermudas, VERRILL, op. cit. x (2), pp. 556 & 557, pl. lxviii, fig. 3, pl. lxvii, fig. 2.
- Alcyonium fulvum* (= *Sympodium* Forsk.), KÜKENTHAL, Denk. Ges. Jena 1904, p. 41; *A. digitatum*, assimilation and nutriment, PRATT, Rep. Brit. Ass. 1903-1904, pp. 688 & 689.
- †*Alveolites suborbicularis*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 101, figg. 15-17.
- †*Alveopora cretacea*, Portugal, FELIX, Comm. geol. Portugal v, p. 380, n. sp.
- Amophyllactis* (?), notes on peculiar larva of, CARY, Biol. Bull. vii, pp. 75-78, 4 figg.
- Amphihelia oculata*, p. 308, pl. xiv, fig. 1, MARENZELLER, Ergebn. Valdivia iii.
- Anemonia elegans*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 50, pl. vi, fig. 4, n. sp.
- Anisopsammia* n. g. for *Amphihelia rostrata* Pourtal., p. 314, pl. xviii, fig. 23, MARENZELLER, Ergebn. Valdivia iii.
- Anthelia fuliginosa* (= *Sympodium fuliginosum* Ehrb. = *S. purpurascens* Ehrb. = *Anthelia glauca* Ehrb. = *A. strumosa* Ehrb.), KÜKENTHAL, Denk. Ges. Jena 1904, pp. 43-47.
- Antheopsis ocellata*, Chili, anatomy, McMURRICH, Zool. Jahrb. Suppl. iii, 2, Fauna Chilensis, p. 264, figg. 45-47.

- †*Aphyllostylus* n. gen. for *A. gracilis* n. sp., Manitoba, Silurian, WHITEAVES, Ottawa Natural. xviii, pp. 113 & 114.
- †*Aplosmilía euteches*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 179, pl. xvii, fig. 7, n. sp.
- Asteroseris planulata*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 156, pl. xxvii, fig. 8.
- †*Astrangia* (*Cænangia*) *conradi*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 442, pl. cxxv, figg. 1 & 2, n. sp.
- †*A. lineata*, Maryland, VAUGHAN, t. c. p. 441, pl. cxxiv, figg. 1-4.
- †*Astrhelía palmata*, Maryland, VAUGHAN, t. c. p. 439, pl. cxxiii, figg. 1-4.
- †*Astrocaenia subornata* var. *africana*, Somaliland, DACQUÉ, Beitr. Pal. Oesterr.-Ung. xvii, p. 11, pl. ii, fig. 5; †*A. cf. konincki*, Cretaceous, Egypt, FOURTEAU, Bull. Inst. Egypt iv, 4, p. 346, pl. v, figg. 10 & 11.
- †*A. pygmæa*, Portugal, FELIX, Comm. geol. Portugal v, p. 385, pl. iii, figg. 4 & 5, n. sp.
- Astylospongia præmorsa*, REMEŠ, Vestnik. Klub. Prostějove 1898, i, p. 8, fig. 2.
- Aulocyathus* n. g. near *Ceratotrochus*, p. 300, *A. juvenescens* n. sp., E. Africa, p. 301, pl. xviii, fig. 17, MARENZELLER, Ergebn. Valdivia iii.
- †*Aulopora serpens*, p. 57, figg. 6 & 7, var. *tubæformis*, figg. 8 & 9, Devonian, SMYČKA, Vestnik. Klub. Prostějove 1905, vii.
- Axohelia schrammii*, VERRILL, Tr. Connect. Ac. xi (1), p. 110, pl. xviii, figg. 3 & 4.
- Balanophyllia italica*, p. 313, pl. xviii, fig. 22, MARENZELLER, Ergebn. Valdivia iii.
- B. truncata*, p. 68, pl. xxv, fig. 4, *B. induta*, p. 69, fig. 1, *B. fossata*, p. 70, fig. 2, *B. patula*, p. 71, fig. 6, *B. torta*, p. 72, fig. 5, *B. cauliculata*, p. 73, fig. 8, *B. basedowi*, p. 74, fig. 7, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *B. dilatata*, S. Australia, DENNANT, t. c. p. 10, pl. i, fig. 2 : n. spp.
- †*Baryhelía hexacnema*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 182, pl. xvii, fig. 6, n. sp.
- Bathyaetis symmetrica*, p. 312, pl. xviii, fig. 25, MARENZELLER, Ergebn. Valdivia iii.
- B. beaumariensis*, p. 66, pl. xxiv, fig. 3, *B. excelsa*, p. 67, pl. xxiv, fig. 4, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, n. spp.
- †*Bolboporites americanus*, New York, RUEDEMANN, Rep. N. York Mus. lv, p. 11, pl. i, fig. 1.
- Boloceroopsis* n. gen. for *B. platei* n. sp., Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 255, figg. 34 & 35.
- Bunodeopsis globulifera*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 559, pl. lxvii, fig. 4, n. sp.
- †*Calamophyllia tubiporæformis*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 173, pl. xvi, fig. 7, n. sp.
- †*Calceola sandalina*, Devonian, SMYČKA, Vestnik. Klub. Prostějove vii, p. 58, figg. 12 & 13.
- Callogyra* n. gen. for *C. formosa* n. sp., Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 86, pl. xxiv, figg. 1 & 2.
- Campophyllum uralicum*, Ural, Devonian, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 71, fig. 14, n. sp.
- †*Caninia cylindrica* var. *bristoliensis*, VAUGHAN, P. Bristol Soc. x, p. 103, pl. i, fig. 4.
- Caryophyllia clavus*, =(communis auctt.) variation local, pp. 281-293, pl. xvi, fig. 9, *cyathus*, fig. 6, *arcuata*, fig. 8, p. 295, MARENZELLER, Ergebn. Valdivia iii.
- C. diomedæe*, Mexico, MARENZELLER, Bull. Mus. Harvard xliii, p. 79, pl. i, fig. 2; *C. antarctica*, Bouvet Island, p. 293, pl. xvi, fig. 7, MARENZELLER, Ergebn. Valdivia iii : n. spp.

- +*Caryosmilia granosa*, Cretaceous, Egypt, FOURTEAU, Bull. Inst. Egypt iv, 4, p. 345, pl. v, figg. 8 & 9.
- +*Centrastræa leptomeres*, p. 169, pl. xvi, fig. 1, *C. blanchenhorni*, p. 170, figg. 2 & 3, *C. polystyla*, fig. 4, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, n. spp.
- +*Ceratopora jacksoni*, New York, Marcellus limestones, WOOD, Rep. N. York Mus. lv, p. 155, pl. i, fig. 1.
- Ceratotrochus australiensis*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 56, pl. xxii, fig. 5.
- C. delicatus*, Agulhas Bank, p. 302, pl. xviii, fig. 18, MARENZELLER, Ergebn. Valdivia iii, n. sp.
- Ceriantipathaires*, of van Beneden, a valid Order, ROULE, p. 710, C.R. Ac. Sci. cxxxviii.
- Cerianthus solitarius*, form regulation, CHILD, Biol. Bull. vi, pp. 55-75, 266-287, 7 figg., vii, pp. 127-154, 193-215, 263-280; *C. solitarius*, form regulation, CHILD, Smithson. Collect. xlv, pp. 134-143; *C.*, Southern California, KOFORD, Science xix, pp. 505-508; *C. borealis*, development and anatomy, KINGSLEY, Tufts Coll. Stud. 1904, No. 8, pp. 345-361, 7 figg.
- C. danielsseni*, Lofoden, ROULE, C.R. Ass. Franc. xxxiii, pp. 791-793; *C. natans*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 47, pl. ix, fig. 6 : n. spp.
- +(! *Chetetes*) *bristolensis*, Bristol, Carboniferous, VAUGHAN, P. Bristol Soc. x, p. 96, pl. i, fig. 2, n. sp.
- Chitonanthus castaneus*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, Fauna Chilensis, p. 282, figg. 72-74, n. sp.
- Choriactis impatiens*, Chili, McMURRICH, t. c. p. 272, figg. 59-61.
- C. crassa*, Chili, McMURRICH, t. c. p. 274, figg. 62-65, n. sp.
- Cladocora arbuscula*, MARENZELLER, Bull. Mus. Harvard xliii, p. 76, pl. i, fig. 1.
- +*Cleistopora (Michelinia) geometrica*, Bristol, VAUGHAN, P. Bristol Soc. x, p. 99, pl. i, fig. 3.
- +*Clisiophyllum urbinatum*, p. 117, pl. i, fig. 6, *C. sp.*, p. 119, VAUGHAN, t.c.
- Caloria sinensis*, anatomy, HEICKE, Arch. Naturg. 1904, i, p. 282, pl. xii, figg. 13-17.
- Cenopsammia profunda*, p. 313, pl. xviii, fig. 24, MARENZELLER, Ergebn. Valdivia iii.
- +*Comoseris leptophyes*, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 172, pl. xvi, fig. 6, n. sp.
- Conosmilia granulata*, p. 65, pl. xxiv, fig. 5, *C. stylifera*, p. 65, fig. 1, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, n. spp.
- Corallium japonicum*, Japan, KITAHARA, J. Imp. Fish. Bureau Tokyo xiii, 3, 14 pp., pls. i-v; *C. japonicum*, p. 21, figg., *C. boshuensis*, p. 22, figg., *C. sulcatum*, p. 23, figg., *C. elatus*, p. 24, figg., *C. kononji*, p. 26, figg., *C. inutile*, p. 27, figg., structure and habits, KISHINOUE, op. cit. xiv, 1.
- C. pusillum*, Japan, KISHINOUE, t. c. p. 27, pl. v, figg. 3 & 4, pl. vii, fig. 4, n. sp.
- Cribrina hermaphroditica*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 287, figg. 78-81.
- C. conica*, *C. elongata*, Chili, McMURRICH, op. cit. 1904, p. 284, figg. 75-77, p. 289, figg. 82-84, n. spp.
- +*Cyathophyllum* aff. *murchisoni*, VAUGHAN, P. Bristol Soc. x, p. 116, pl. i, fig. 5.
- +*C. taramelli*, Italian Alps, d'OSSAT, Atti Acc. Lincei (5) iv, p. 92, fig. 1; +*C. uralicum*, Ural, Devonian, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 70, fig. 13 : n. spp.
- +*Cyclolites choffati*, FELIX Commis. geol. Portugal v, p. 379, pl. iii, figg. 2 & 3, n. sp.

- Cyphastræa nodulosa*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 107, pl. xxxi, fig. 2; †*C. intermedia*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 198, pl. x, fig. 1 : **n. spp.**
- †*Cystiphyllum geyeri*, Corniche Alps, d'OSSAT, Atti Acc. Lincei (5) iv, p. 97, figg. 5, 6, 7, **n. sp.**
- Dactylactis benedeni*, Gulf of California, pelagic Cerianthus, GRAVIER, Ann. Sci. nat. xx, pp. 253-289.
- Deltocyathus stellaris*, p. 60, pl. xxiii, fig. 1, *D. fontinalis*, p. 61, fig. 5, *D. verconis*, p. 62, pl. xxiv, fig. 2, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *D. vincentinus*, S. Australia, DENNANT, t. c. p. 6, pl. ii, fig. 1 : **n. spp.**
- Dendrophyllia cornigera*, p. 313, pl. xviii, fig. 21, MARENZELLER, Ergebn. Valdivia iii.
- Desmophyllum crista galli*, pl. x, fig. 2, localities p. 267, MARENZELLER, t. c.
- †*Dimorphastræa kobyi*, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 171, pl. xvi, fig. 5, **n. sp.**
- Discotrochus* †*pateriformis*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 57, pl. xxii, fig. 7, **n. sp.**
- Dissonema turrida*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 8, pl. ii, fig. 10.
- Distichoptilum gracile*, Iceland, JUNGENSEN, Danish Ingolf. Exp. v, 1, p. 62, pl. i, figg. 12-14.
- Dysmorphosa minuta*, budding of, TRINCI, Monit. Zool. ital. xv, pp. 304-310.
- Echinopora elegans*, *E. concinna*, pp. 138 & 139, pl. xxix, figg. 3 & 4, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), **n. spp.**
- †*Emmonsia jaiva*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 59, fig. 4, **n. sp.**
- †*Endophyllum torosum*, d'OSSAT, Atti Acc. Lincei (5) iv, p. 94, fig. 4.
- Epicystis osculifera*, VERRILL, Tr. Connect. Ac. xi (1), p. 47, pl. vii, fig. 1.
- Epizoanthus patagonichus*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, 1904, p. 296, figg. 85 & 86.
- Errina macrogastra*, Gulf of California, MARENZELLER, Bull. Mus. Harvard xliii, p. 81, pl. ii, fig. 1, pl. iii, fig. 1, **n. sp.**
- Eunicea atra*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 52, pl. ix, figg. 4 & 5, **n. sp.**
- Eusmilia aspera*, VERRILL, t. c. p. 114, fig. 3.
- Favia fragum*, p. 90, pl. xiii, figg. 1 & 2, *F. gravida*, p. 91, pl. xiii, fig. 3, *F. leptophylla*, p. 91, figg. 4 & 5, Bermudas, VERRILL, t. c.
- F. whitfield*, Bermudas, VERRILL, t. c. p. 132, pl. xxv, p. 5; †*F. minor*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 199, pl. x, fig. 6 : **n. spp.**
- †*Favulinæ n. subfam.*, VERRILL, Tr. Connect. Ac. xi (1), p. 87.
- †*Favosites goldfussi*, d'OSSAT, Atti Acc. Lincei (5) iv, p. 99, fig. 13.
- †*F. thilda*, Corniche Alps, d'OSSAT, t. c. p. 98, figg. 8-12; †*F. uralica*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 59, fig. 1 : **n. spp.**
- †*Fistulipora* aff. *incrustans*, VAUGHAN, P. Bristol. Soc. x, p. 120, pl. 1, fig. 1.
- †*Flabellum medioplicatum*, p. 52, pl. xxii, fig. 2, *F. microscriptum*, p. 53, p. xxii, fig. 1, *F. grangense*, p. 54, fig. 3, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *F. deludens*, pl. xvii, fig. 10, p. 269 (= *japonicum* and *laciniatum*), *stabile*, Cape Verde, p. 273, fig. 12, *chunii* (= *distinctum* Duncan), p. 274, pl. xviii, fig. 14, *magnificum*, Sumatra, p. 276, pl. xvii, fig. 13, *inconstans*, Francis-Bucht, p. 277, pl. xvii, fig. 11, MARENZELLER, Ergebn. Valdivia iii : **n. spp.**
- Gorgonia cavolinii*, chemical composition, COOK, Amer. J. Physiol. xii, pp. 95-98.

- Gyrostoma selkirkii*, *G. incertum*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, pp. 227-230, pl. xiv, figg. 6-12, pl. xv, figg. 13-15, **n. spp.**
- Halianthus chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 223, pl. xiv, fig. 1-5, **n. sp.**
- Halipterus christii*, Færoe Islands, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 45, pl. ii, figg. 30-32.
- +*Heliolites interstinctus*, p. 104, figg. 18 & 19, var. *devonica*, p. 105, fig. 20, *H. porosus*, p. 106, fig. 21, D'OSSAT, Atti Acc. Lincei (5) iv.
- +*H. devonica*, Ural, Devonian, BOGATIREW, Trudni Kazan. Univ. xxxii, v, p. 69, fig. 5, **n. sp.**
- +*Heliotis porosa*, Devonian, SMYČKA, Vestník. Klub. Prostějove 1905, vii, p. 56, figg. 10 & 11.
- +*Heterocenia provincialis*, structure, JANENSCH, Zeitschr. Deutsch. geol. Ges. lv, 4, pp. 486-493.
- Holcetrochus crenulatus*, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 3, pl. ii, fig. 4, **n. sp.**
- +*Homophyllia australis*, DENNANT, t. c. p. 8, pl. ii, fig. 2.
- Hormathia exlex*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 279, figg. 70 & 71, **n. sp.**
- Isophyllia dipsacea*, *I. fragilis*, pp. 118-125, pl. xvi, fig. 12, pl. xvii, figg. 1-7, pl. xviii, figg. 1 & 2, pl. xix, figg. 1-5, pl. xx, fig. 2, VERRILL, Tr. Connect. Ac. xi (1).
- I. multiflora*, Bermudas, VERRILL, t. c. p. 125, pl. xx, fig. 1, pl. xxv, fig. 1, **n. sp.**
- +*Latimæandra zumoffeni*, p. 175, pl. xvii, fig. 3, *L. amphitrites*, p. 176, fig. 1, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, **n. spp.**
- Lebrunia dana*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 48, pl. vi, fig. 1; *L. danae*, Bermudas, VERRILL, op. cit. x (2), p. 555, pl. lxvii, fig. 3, pl. lxix, fig. 1.
- Leptocyathus? convexus*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 59, pl. xxiii, fig. 3, **n. sp.**
- +*Leptoseris meneghinii*, Dalmatia, DAINELLI, Pal. Ital. x, p. 179, pl. xv, fig. 6, **n. sp.**
- +*Lonsdaleia frecki*, *L. fennemai*, Sumatra, VOLZ, Geol. Pal. Abh. vi, p. 100, figg. 32-34, p. 102, fig. 35, **n. spp.**
- Lophohelia prolifera*, p. 307, pl. xv, fig. 3, MARENZELLER, Ergebn. Valdivia iii.
- Lophophyllum proliferum*, morphology, YAKOVLEVA, Bull. Lab. St. Petersb. vii, 2, pp. 87-101, 1 fig.
- Madracis decactis*, VERRILL, Tr. Connect. Ac. xi (1), p. 108, fig. 2.
- Madreporaria*, morphology, septal sequence, DUERDEN, Biol. Bull. vii, pp. 79-104, 9 figg.
- Madreporineæ*, transformation of dorsal tentacle in several genera, KREMPF (136).
- Meandrina braziliensis*, VERRILL, Tr. Connect. Ac. xi (1), p. 190, pl. xxxiv, fig. 1.
- +*Menophyllum ulrichanum*, Colorado, Girty, Prof. Papers U. S. Geol. Surv. 16, 1903, p. 271, pl. i, figg. 1 & 2, **n. sp.**
- Metridium*, used in aquaria as a test for artificial sea waters, TRUE, Science xix, p. 252.
- ? *M. parvulum*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 276, figg. 66-68, **n. sp.**
- Millepora alcornis*, VERRILL, Tr. Connect. Ac. xi (1), p. 182, fig. 13.
- Mæandridæ* **n. fam.** *Mæandrinæ* **n. subfam.**, VERRILL, t. c. p. 65.
- Mæandra labyrinthiformis*, p. 70, pl. x, figg. 1-3, *M. cerebrum*, p. 74, fig. 4, pl. xii, fig. 4, pl. xiv, figg. 4 & 5, *M. agassizii*, p. 80, pl. xiv, fig. 1, *M. areolata*, p. 81, pl. xi, figg. 1 & 2, pl. xii, figg. 1-3, *M. conferta*, p. 84, pl. xiii, fig. 6, Bermudas, VERRILL, t. c.
- Mussa (Symphyllia) rigida*, p. 127, pl. xxv, figg. 2 & 3, *M. harttii*, p. 128,

- pl. xxii, figg. 1 & 2, pl. xxiii, figg. 1 & 2, pl. xxv, fig. 4, pl. xxxiii, fig. 3, *M. braziliensis*, p. 192, pl. xxi, fig. 1, VERRILL, t. c.
- M. (Symphyllia) hispida*, Bermudas, VERRILL, t. c. p. 127, pl. xxi, fig. 2; *M. (Symphyllia) tenuisepta*, Bermudas, VERRILL, t. c. p. 193, pl. xxi, fig. 3; *M. (Symphyllia) annectens*, Bermudas, VERRILL, t. c. p. 178, pl. xxxv, figg. 1 & 2 : **n. spp.**
- Mycedium explanatum*, VERRILL, t. c. p. 136, pl. xxix, fig. 1.
- M. tenuicostatum*, Bermudas, VERRILL, t. c. p. 137, pl. xxix, fig. 2, **n. sp.**
- †*Nicholsonia* **n. gen.** for *N. cylindrica* **n. sp.**, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 69, fig. 6.
- Oculina varicosa*, p. 173, pl. xxxii, figg. 2-4, pl. xxx, fig. 3, *O. valenciennesi*, p. 176, pl. xxxii, fig. 5, Bermudas, VERRILL, Tr. Connect. Ac. xi (1).
- O. umbellata*, Australian Tertiaries, DENNANT, Tr. Soc. S. Austral. xxviii, p. 63, pl. xxv, fig. 3, **n. sp.**
- Odonthocyathus stella* Alcock, young of *Stephanotrochus*, MARENZELLER, p. 307, Ergbn. Valdivia iii.
- Omphyma* sp., morphology and morphogeny, YAKOVLEVA, Bull. Lab. St. Petersb. vii, 2, pp. 87-101, figg. 3-5.
- Orbicella annularis*, p. 94, pl. xv, figg. 1 & 2, *O. excelsa*, p. 98, fig. 4, *O. aperta*, p. 103, pl. xxxiii, fig. 1, Bermudas, VERRILL, Tr. Connect. Ac. xi (1).
- O. hispidula*, Bermudas, VERRILL, t. c. p. 100, pl. xv, fig. 3; *O. braziliana* **n. n.** for *O. cavernosa* Quelch.; †*O. humphreysi*, p. 171, pl. x, fig. 2, *O. lyonsi*, p. 195, figg. 4 & 5, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi : **n. spp.**
- Pachycerianthus* **n. gen.** [no sp. named], Japan, ROULE, C.R. Ass. Franc. xxxiii, pp. 791-793; *P. benedeni*, characters, ROULE, p. 708, C.R. Ac. Sci. cxxxviii.
- †*Pachypora reticulata*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 100, fig. 14.
- Palythoa grandiflora*, VERRILL, Tr. Connect. Ac. xi (1), p. 52, pl. vii, fig. 2.
- P. grandiflora*, Bermudas, VERRILL, op. cit. x (2), p. 564, pl. lxviii, fig. 6, **n. sp.**
- Paractis nivea*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 239, pl. xv, fig. 16-19.
- P. ignota*, *P. tenuicollis*, pp. 242 & 243, pl. xv, figg. 20-26, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, **n. spp.**
- †*Paracyathus vaughani*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 438, pl. cxxii, figg. 1-3.
- Parasmilia fecunda*, p. 311, pl. xv, fig. 5, MARENZELLER, Ergebn. Valdivia iii.
- P. flindersensis*, p. 64, pl. xxiii, fig. 2, *P. lucens*, p. 64, pl. xxiv, fig. 6, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Parantheopsis* **n. gen.** for *P. cruentata* (= *Actinia* Couthouy), McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 232.
- Parazoanthus elongatus*, Chili, McMURRICH, t. c. p. 298, figg. 87-89, **n. sp.**
- †*Paronipora* **n. gen.** for *P. penicillata* **n. sp.** (*Favositidae*), CAPEDER, Riv. ital. Pal. x, 1, pp. 58-61, pls. ii & iii.
- Pavonaria finmarchica*, Iceland, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 39, pl. ii, figg. 28 & 29, pl. iii, figg. 33-36.
- Pennaria tiarella*, maturation, fertilization, early cleavage, formation of ectoderm and endoderm, HARGITT, Arch. Entwicklmech. xviii, pp. 453-488, pls. xxiv-xxviii.
- Pennatula aculeata*, p. 11, pl. i, fig. 1, JUNGENSEN, Danish Ingolf-Exp. v, 1, anatomy.
- P. prolifera*, Davis Straits, JUNGENSEN, t. c. p. 18, pl. ii, figg. 15-24, **n. sp.**
- Pennatulidae*, polymorphism, HICKSON, Rep. Brit. Ass. 1903, p. 688.
- Phellia rufa*, VERRILL, Tr. Connect. Ac. xi (1), p. 49, pl. vi, fig. 5.
- P. simplex*, Bermudas, VERRILL, t. c. p. 48; *P. rufa*, Bermudas, VERRILL, op. cit. x (2), p. 557, pl. lxviii, fig. 2 : **n. spp.**

- †*Phillipsastræa ananas*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 93, figg. 2 & 3.
 †*Phyllocænia ægyptiaca*, affinities, FOURTEAU, Bull. Inst. Egypt. iv, 4, p. 347.
 †*P. transiens*, Portugal, FELIX, Comm. geol. Portugal v, p. 384, pl. iii, fig. 1, **n. sp.**
Phymactis clematis, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 259, figg. 36-43.
Placotrochus magnus, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 54, pl. xxii, fig. 4, **n. sp.**
Platytrachus maudensis, Australian Tertiaries, DENNANT, t. c. p. 56, pl. xxii, fig. 6, **n. sp.**
Plesiastræa goodei, VERRILL, Tr. Connect. Ac. xi (1), p. 106, fig. 1.
P. goodei, Bermudas, VERRILL, op. cit. x (2), p. 553, pl. lxvii, fig. 1; *P. proximens*, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 9, pl. ii, fig. 3 : **n. spp.**
Polytremæcis lindströmi, REMEŠ, Vestník. Klub. Prostejove 1898, p. 7, fig. 1, **n. sp.**
Porites polymorpha, VERRILL, Tr. Connect. Ac. xi (1), p. 158, pl. xxxi, fig. 3, *P. astreoides*, p. 160, pl. xxxi, fig. 4, *P. verrillii*, p. 161, fig. 5, *P. banneri*, p. 162, fig. 6.
Porosphaera, structure and affinities, HINDE, J. R. Micr. Soc. 1904, pp. 1-25, pls. i & ii.
Protopalythoa n. n. for *Gemmaria* McMURRICH, *P. grandis n. sp.*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 563, pl. lxvii, fig. 6.
Protoptilum denticulatum, Greenland, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 59, pl. i, figg. 9-11, **n. sp.**
P. carpenteri, p. 51, pl. i, figg. 2 & 3, *P. thomsoni*, p. 55, figg. 4-8, JUNGENSEN, t. c.
Pycnanthus lineolatus, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 245, pl. xv, figg. 27-29.
Rhizotrochus radiatus, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 2, pl. i, fig. 1, **n. sp.**
Rhodaræa lagrenæi, anatomy, HEICKE, Arch. Naturg. 1904, i, p. 258, pl. xii, figg. 1-12.
Sagartia spp., functioning of nematocysts, ABRIC, C.R. Soc. Biol. lvi, pp. 1008-1010; *S. luciae*, variation in number of stripes, DAVENPORT, Mark Anniv. Vol. pp. 137-164, pl. x; *S. davisii*, regeneration and non-sexual reproduction, TORREY & THERY, Univ. Calif. publ. Zool. i, 6, pp. 211-226, 9 figg.; *S. chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 265, figg. 48-52; *S. parasitica*, GORKA, Allatt. Kozl. Maygar Tars. i, 1902, p. 104, fig. 1; *S. davisii*, habits and reactions of, TORREY, Biol. Bull. vi, pp. 203-216.
S. herpetodes, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 268, figg. 53-58, **n. sp.**
 †*Septastrea marylandica*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 444, pl. cxxvi, figg. 1 & 2, pl. cxxvii, figg. 1-3, pl. cxxviii, figg. 1 & 2, pl. cxxix.
Siderastræa, septal sequence, DUERDEN, Rep. Brit. Ass. 1903, p. 687; *S. siderea*, p. 151, pl. xxx, figg. 2 & 3, *S. radians*, p. 153, fig. 1, *S. stellata*, p. 155, figg. 4 & 5, Bermudas, VERRILL, Tr. Connect. Ac. xi (1); *S. radians*, natural history, anatomy, postlarval development, DUERDEN (52A).
Solenastræa hyades, Bermudas, VERRILL, t. c. p. 104, pl. xv, fig. 5.
 †*S. anomala*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 173, pl. x, fig. 3, **n. sp.**
Solenocaulon tortuosum, pl. vii, fig. 1, *S. cervicorne*, fig. 2, pl. viii, figg. 2, 3, 7, 8 & 9, *S. grayi*, pl. viii, figg. 1-5, anatomy, JANOVER, Rev. Suisse Zool. xii, pp. 445-538, pls. vii & viii.

- Solenosmilia variabilis*, p. 310, pl. xv, fig. 4, MARENZELLER, *Ergebn. Valdivia* iii.
- Sphenotrochus aurantiacus*, Agulhas Bank, MARENZELLER, p. 280, pl. xviii, fig. 15, t. c. n. sp.
- Spongodes kluzingeri*, anatomy, KÜKENTHAL, *Denk. Ges. Jena* 1904, p. 51, pl. iv, fig. 9.
- S. mayi*, p. 53, pl. iv, fig. 10, pl. v, fig. 20, *S. hartmeyer*, p. 55, pl. iv, fig. 11, pl. v, fig. 21, *S. ehrenbergi*, p. 56, pl. iv, fig. 12, pl. v, fig. 22, Red Sea, KÜKENTHAL, t. c. n. spp.
- Stenocyathus vermiformis*, p. 298, pl. xviii, fig. 16, MARENZELLER, *Ergebn. Valdivia* iii.
- Stenohelia profunda*, Mexico, MARENZELLER, *Bull. Mus. Harvard* xliii, 2, 3, p. 86, pl. ii, fig. 2.
- +*Stenopora leichardti*, Queensland, GREGORY & DAINTREE, *P. Soc. Victoria* xvi, 2, p. 322.
- +*Stephanocenia halmopotis*, *S. major*, p. 181, pl. xvii, figg. 5, 8, Jura Chalk, FELIX, *Beitr. Pal. Oesterr.-Ung.* xv, n. spp.
- Stephanotrochus campaniformis*, Atlantic, p. 302, pl. xviii, fig. 20, *explanans*, Sumatra, p. 304, pl. xviii, fig. 19, MARENZELLER, *Ergebn. Valdivia* iii, n. spp.
- Stichopathes richardi* n. sp. (not described), ROULE, *C.R. Ac. Sci.* cxxxviii, pp. 1621 & 1622.
- Streptelasma europeum*, morphology, YAKOVLEVA, *Bull. Lab. St. Petersb.* vii, 2, pp. 87-101, fig. 2.
- +*Stromatopora concentrica*, d'OSSAT, *Atti Acc. Lincei* (5) iv, p. 109, fig. 22.
- Stylaster divergens*, Mexico, MARENZELLER, *Bull. Mus. Harvard* xliii, p. 83, pl. ii, fig. 3, pl. iii, fig. 2, n. sp.
- +*Syringopora*, Clifton, Carboniferous, VAUGHAN, *P. Bristol. Soc.* x, p. 99, n. sp. unnamed.
- Tealia crassicornis*, male reproductive organs, RETZIUS, *Biol. Untersuch.* xi, p. 29, pl. xiii, figg. 14-20; *T. c.*, functioning of nematocysts, ABRIC, *C.R. Soc. Biol.* lvi, pp. 1008-1010.
- Tetracoralla* or rugose corals, development and affinities, DUERDEN, *Science* xix, p. 217.
- Trachyphyllinae* n. subfam., VERRILL, *Tr. Connect. Ac.* xi (1), p. 84.
- Trematotrochus verconis*, S. Australia, DENNANT, *Tr. R. Soc. S. Austral.* xxviii, p. 5, pl. i, fig. 4, n. sp.
- +*Trochocyathus calcitrapa*, Saratov, ARKHANGHELSKII, *Mater. gheol. Rossii* xxii, p. 61, pl. xi, figg. 11 & 12.
- T. wilkinsoni*, Australian Tertiaries, DENNANT, *Tr. R. Soc. S. Austral.* xxviii, p. 58, pl. xxiii, fig. 4, n. sp.
- +*Trochoseris nutritii*, Dalmatia, DAINELLI, *Pal. Ital.* x, p. 174, pl. xv, fig. 1, n. sp.
- Umbellula lindahl*, p. 75, pl. iii, figg. 37-46, *U. encrinus*, p. 79, pl. iii, figg. 46-51, JUNGENSEN, *Danish Ingolf-Exp.* v, 1.
- Verrucella grandis*, Bermudas, VERRILL, *Tr. Connect. Ac.* xi (1), p. 53, pl. ix, figg. 1-3, n. sp.
- Virgularia cladiscus* n. n. for *V. tuberculata* Marshall, JUNGENSEN, *Danish Ingolf-Exp.* v, 1, p. 33.
- Xenia umbellata*, p. 34, *X. fuscescens*, p. 34, 2 figg., KÜKENTHAL, *Denk. Ges. Jena* 1904.
- Zoanthus dubius*, VERRILL, *Tr. Connect. Ac.* x (2), p. 562, pl. lxvii, fig. 9.
- Z. proteus* (= *Z. flos-marinus* McMurrich), Bermudas, VERRILL, t. c. p. 561, pl. lxvii, fig. 5, n. sp.

VI. CTENOPHORA.

[The following memoirs refer to *Ctenophora*:—BROWNE (18), GILSON (72), HARTLAUB (96), HUNTER (113), SCHNEIDER (199), TORREY (210), MAR. BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

Origin of genital cells in Ctenophores, SCHNEIDER (199).
 Reactions of *Mnemiopsis*, HUNTER (113).
 Norway, collections, HARTLAUB (96).
 San Diego, n. spp., TORREY (210).

SYSTEMATIC.

Beroë forskali, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 47, pl. i, fig. 2; *B. ovata*, reproductive and renal cells, SCHNEIDER, Zeitschr. wiss. Zool. lxxvi, pp. 388-399, pl. xxiv.
Euplokamis californensis, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 46, n. sp.
Mertensia ovum, San Diego, TORREY, t. c. p. 46, pl. i, fig. 1.
Mnemiopsis, effect of temperature changes, and geotropism, HUNTER, Science xix, pp. 219 & 220; *M.*, reactions, HUNTER, Biol. Bull. vi, pp. 324.
Pleurobrachia bachei, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 46, pl. i, fig. 3.
Steenstrupia rubra, anatomy, HARTLAUB, Wiss. Meeresuntersuch. v, 2, pp. 97-106, fig. 3.

XVII. SPONGIÆ.

BY

W. WOODLAND.

CONTENTS.

	Page
INTRODUCTION	3
I. TITLES	4
II. BIOLOGY	8
A. Evolution	8
B. Morphology	8
(i) General Accounts	8
(ii) External Characters	8
(iii) Anatomy of Soft Parts. Canal-System	8
(iv) Skeletal System	8
(a) General Accounts	8
(b) Material of the Skeleton	9
(c) Skeletal Elements, Morphology, Develop- ment, and Nomenclature of	9
(d) Skeletal Anatomy	9
(v) <u>H</u> istology	9
(a) General Accounts	9
(b) Special Organs or Tissues	9
C. Physiology.	9
(i) General Accounts	9
(ii) Particular Functions	9
D. Bionomics	10
E. Reproduction, Development and Growth	10
(i) Germ-Cells, Fertilization	10
(ii) Embryology	10
(a) General Accounts	10
(b) Early Stages, Larvæ, Metamorphosis, &c.	10
(iii) Asexual Reproduction	10
(a) Fission, Vegetative Budding and Regene- ration	10
(b) Germinal Budding and Gemmule-For- mation	10

	Page
F. Miscellaneous	10
(i) Bibliography	10
(ii) Technique	10
(iii) Economics	10
(iv) Classification	11
(v) Chemistry of Sponges	11
III. DISTRIBUTION.	
A. Geographical	11
a. Marine	11
(i) General	11
(ii) Atlantic Ocean and Adjacent Seas	11
(iii) Indian Ocean and Adjacent Seas	11
(iv) Pacific Ocean and Adjacent Seas	11
(v) Arctic Seas (vacant).	
(vi) Antarctic Seas	11
β. Freshwater	11
B. Geological	11
(i) General (vacant).	
(ii) Cainozoic	11
(iii) Mesozoic	11
(iv) Palæozoic	12
IV. SYSTEMATIC.	
A. Porifera, general	12
B. Calcarea (including <i>Astroscleridæ</i>)	12
(i) Homocœla	12
(ii) Heterocœla	12
C. Hexactinellida	13
(i) Lyssacina	13
(ii) Dictyonina	16
D. Demospongiæ	18
(i) Tetraxonida	18
(a) Carnosa	18
(b) Tetractinellida	18
(1) Choristida	18
(2) Lithistida	19
(ii) Monaxonida	21
(a) Hadromerina	21
(1) Aciculina	21
(2) Clavulina	21
(b) Halichondrina	22
(iii) Keratosa	25
(a) Dictyoceratina	25
(b) Dendroceratina	26
(iv) Myxospongida	26
E. Octactinellida (vacant).	
F. Heteractinellida (vacant).	
G. Incertæ Sedis	26

INTRODUCTION.

I. The record of Sponge literature for 1904 comprises 61 publications (including 53A), exclusive of abstracts or reviews. This number is one more than that of last year, but not all of these publications belong to the year 1904 as will be seen by the list appended below.

II. Sponge literature has during 1904 chiefly been enriched by the four splendid monographs of IJIMA (24), SCHULZE (43), TOPSENT (50) and WILSON (60)—monographs principally of systematic value, though the last three authors also provide general accounts of the skeleton and other portions of sponge structure. The monograph of IJIMA continues his important researches on Japanese Hexactinellids (*Rossellidæ*); SCHULZE describes the Hexactinellid sponges of the "Valdivia" expedition; TOPSENT describes sponges from the Azores and WILSON sponges obtained by the "Albatross" in the Pacific Ocean. Other systematic memoirs of importance are those of HINDE (18, 19) on the genus *Porosphaera*, MINCHIN (36) on the genus *Leucosolenia*, SEELY (45), SZYMAŃSKI (47) and THUM (49). The number of new genera and new species described in 1904 is considerable.

III. Some of the chief features of morphological importance to be noticed are the proof of the sponge nature and the description of the intimate structure of *Porosphaera* by HINDE (18); the description of the huge basal spicule of *Monoraphis chuni* by SCHULZE (43), who also gives a general account of Hexactinellid morphology, and, amongst other things, the description of Sollas' membrane in *Pacillastra* and *Penares*, and of the reticular skeletal septa crossing the gastral cavity of *Euplectella* and *Chonelasma* by WILSON (60).

IV. In Physiology, Bionomics and Economics, there is little to record. MAAS (31, 32) describes the results of rearing Calcareous sponges in water deprived of calcium salts; COBB (5) gives an account of the sponge fishery in Florida; COTTE (6) continues his studies on nutrition in sponges, and certain phenomena, which may be classed under the heading of Bionomics, are described by CUENOT (7), DUERDEN (9), GRUVEL (15), HERDMAN (17), TOPSENT (50) and WILSON (60). In connection with the Reproduction of Sponges, GÖRICH (14) further contributes to our knowledge of spermatogenesis and oögenesis in sponges, and IJIMA (24), SCHULZE (43), TOPSENT (50) and WILSON (60) also supply information concerning gemmule-formation, larvæ and vegetative budding in several genera of siliceous sponges.

V. Under the heading of Geographical Distribution, the most important contributions are the four large systematic monographs mentioned above, which describe sponges from the Japanese seas, Atlantic and Indian Oceans, Azores and South Pacific Ocean respectively. Sponges from waters adjacent to the Atlantic Ocean are also described by IAKHONTOFF (23), by SOWINSKY (46), and by SZYMAŃSKI (48). Calcareous sponges from the Antarctic Seas are described by VANHÖFFEN (56). The chief palæontological memoirs are those of HINDE (18, 19), JUKES-BROWNE & HILL (26) and ROWE (41).

Sponge memoirs, hitherto unrecorded, belonging to years decidedly previous to 1904 are those of CLARKE (3), GRUVEL (15), HOLLICK (21), IAKHONTOFF (23), REMEŠ (40) and SEELY (45).

I. TITLES.*

- ARNESSEN. (3) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
- BAAR. (4) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
1. BAUMBERGER, E. Fauna der untern Kreide im westschweizerischen Jura. Abh. Schweiz. pal. Ges. xxx, 1903, pp. 1-60.
 2. *CHIRICA, C. Les Spongillides de Roumanie. Ann. Univ. Jassy iii, pp. 15, 16.
 3. CLARKE, J. M. A fauna Siluriana Superior do Rio Trombetas, Para, Brazil. Arch. Mus. Rio Janeiro x, 1899, pp. 7, 8.
 4. CLAUS, C. & GROBBEN, K. Lehrbuch der Zoologie, begründet von C. Claus, neu bearbeitet von Karl Grobben. Erste Hälfte, pp. 249-257, with figg.
Reviewed by SCHUBERG in Zool. Zentrbl. xi, p. 233.
 5. COBB, J. N. The Sponge Fishery of Florida in 1900. Rep. U. S. Fish. Comm. for 1902, xxviii [1904], pp. 163-175, 4 pls.
 6. COTTE, M. J. Des Phenomenes de la Nutrition chez les Spongiares. C.R. Ass. Franc. xxxii, Pt. 2, 1903, pp. 776-780.
— (9-14) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).
 7. CUENOT, L. Contributions a la faune du Bassin D'Arcachon. III. Doridiens. Trav. Lab. Arcachon 1903, p. 4.
 8. DENNANT, J. & KITSON, A. E. Catalogue of the described Species of Fossils in the Cainozoic fauna of Victoria, South Australia and Tasmania. Rec. geol. Surv. Victoria i, (2), 1903, p. 136.
 9. DUERDEN, J. E. West Indian Sponge-incrusting Actinians. Bull. Amer. Mus. xix, 1903, pp. 495-503.
Notice in Nature lxix, Feb., p. 398.
 10. ECK, H. Bemerkung zur Lethæa geognostica, betreffend Schwämme aus dem Muschelkalk. Centrbl. Mineral. No. 15, p. 464.
 11. ETHERIDGE, R. A Monograph of the Cretaceous Invertebrate fauna of New South Wales. Mem. geol. Surv. N. S. Wales, Palæontology, No. 11, 1902, p. 64.
 12. FOX-STRANGWAYS, C. The Geology of the Oolitic and Cretaceous Rocks South of Scarborough. Mem. geol. Surv. England & Wales 1904, pp. 1-118, with 11 plates.
 13. GILLOT, X. Communication on *Spongilla lacustris* L. from Chambilly, Bull. Soc. Autun xvi, 1903, pp. 120, 121.
 14. GÖRICH, W. Zur Kenntnis der Spermatogenese bei den Poriferen und Cölenteraten nebst Bemerkungen über die Oogenese der ersteren. Zeitschr. wiss. Zool. lxxvi, pp. 522-543, 1 pl.
— (19, 20) Zool. Rec. 1903. Abstract by MAAS (33). Abstract in Ann. Nat. Hist. pp. 312, 313, 421.
- GROBBEN. [See CLAUS & GROBBEN (4).]

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

15. GRUVEL, A. Notes sur quelques résultats d'un dragage dans le Golfe de Gascogne. Pr.-verb. Soc. Sci. Bordeaux 1897-98, pp. 248-256.
16. *HENZE, M. Spongosterin, eine cholesterinartige Substanz aus *Suberites domuncula* und seine argeblische Beziehung zum Lipochrom dieses Tieres. Zeitschr. physiol. Chem. xli, pp. 109-124.
17. HERDMAN, W. A. & HORNELL J. Note on pearl-formation in the Ceylon Pearl Oyster. Rep. Brit. Ass. 1903, p. 695.
HILL, W. [See JUKES-BROWNE & HILL (26).]
18. HINDE, G. J. On the structure and affinities of the genus *Porosphaera*, Steinmann. J. R. Micr. Soc., pp. 1-25, 2 pls.
19. —. On the zone of *Marsupites* in the Chalk at Beddington, near Croydon, Surrey. Geol. Mag. pp. 484, 485.
20. HOLMES, W. M. List of fossils collected from the chalk obtained from the cutting and tunnel between Coulsdon and Merstham. P. Croydon Club, pp. 45, 46.
21. *HOLLICK, A. Two Staten-Island sponges. New Brighton, N. Y. Proc. Nat. Sci. Ass. viii, 1890, p. 21.
HORNELL, J. [See HERDMAN & HORNELL (17).]
22. HUARD, V.-A. L'histoire naturelle dans L'Ouest. Natural. Canad. xxxi, pp. 218, 219.
HUTCHINSON. (20) Zool. Rec. 1902 Spong. Abstract by MAAS (33).
23. IAKHONTOFF, G. Communication de l'excursion sur le lac Baical, faite en été de l'année 1902. Protok. Kazan. Univ. 1902-1903, No. 212, pp. 1-11.
24. IJIMA, I. Studies on the Hexactinellida. Contribution iv. (*Rossellidae*). J. Coll. Tokyo xviii, Article 7, 307 pp., 27 pls. with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 545-549.
— (22) Zool. Rec. 1903 Spong. Notice by MAAS (33).
25. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. Jahrb. geol. Reichsanst. liv, Pt. I, p. 86.
26. JUKES-BROWNE, A. J. & HILL, W. The Cretaceous Rocks of Britain. The Upper Chalk of England. Mem. geol. Surv. U. K. iii, pp. 1-566, 79 text-figg., 1 pl.
Reviewed in Ann. Mag. Nat. Hist. (7) xiii, pp. 473, 474.
KITSON, A. E. [See DENNANT & KITSON (8).]
27. KOFOID, C. A. Biological Survey of the waters of Southern California by the marine Laboratory of the University of California at San Diego. Science, n. s. xix (482), pp. 505-508.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 678, 679.
LAMEERE. (30) Zool. Rec. 1902. Notice by MAAS (33).
28. LENDENFELD, R. VON. Über die deszendenztheoretische Bedeutung der Spongiosa. Biol. Centrbl. xxiv, pp. 635, 636.
29. —. Ueber die Herstellung von Nadelpräparaten von Kieselschwämmen. Zeitschr. wiss. Mikr. xxi, pp. 23, 24.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 549.
— (27 & 28) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).

30. [LENDENFELD, R. VON.] See IJIMA (24), KOFOID (27), LENDENFELD (29), MAAS (32), SCHULZE (43), SZYMAŃSKI (47 & 48), THUM (49), TOPSENT (50-52), WILSON (60).
- LEON. (29) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
- LUNDBECK. (32) Zool. Rec. 1903 Spong. Notice by MAAS (33).
31. MAAS, O. Über den Aufbau des Kalkskeletts der Spongien in normalen und in CaCO_3 freien Seewasser. Verh. Deutsch. zool. Ges. xiv, pp. 190-199, 243.
32. —. Ueber der Wirkung der Kalkentziehung auf die Entwicklung der Kalkschwämme. SB. Ges. Munchen xx, Heft. 1, pp. 4-21, with figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 687, 688.
33. —. Porifera. Zool. Jahresber. 1903 (1904), pp. 1-6 (sep. pag.).
34. MARINE BIOLOGICAL ASSOCIATION. Plymouth Marine Invertebrate Fauna. J. Mar. Biol. Ass. vii, No. 2, pp. 185, 186.
35. MARPMANN, G. Über die Präparation der Diatomaceen, Foraminiferen, Polycistineen und Spongillen. Zeitschr. ang. Mikr. x (6), pp. 141-145.
36. MINCHIN, E. A. The characters and synonymy of the British Species of Sponges of the genus *Leucosolenia*. P. Zool. Soc. London, Vol. ii, pp. 349-396, with 8 text-figg.
37. M'INTOSH, W. C. On the Distribution of Marine Animals. Ann. Mag. Nat. Hist. 7th series, xiii, pp. 117-130.
38. MOLOT, E. Sur la découverte a la Montagne de Berru de la Faune du Thanétien. Bull. Soc. Reims xiii, pp. 50, 51.
- PREIWISCH. (39) Zool. Rec. 1903. Notice by MAAS (33).
39. RANGE, P. Das Diluvialgebiet von Lübeck und seine Dryastone. Zeitschr. Naturw. lxxvi (3), pp. 161-272.
40. REMEŠ, M. M. O zkamenělinách bludných balvanů z okół Přibora. Vestník. Klub. Prostějove i, 1898, pp. 5-10.
41. ROWE, A. W. The zones of the White Chalk of the English Coast. (iv) Yorkshire. P. Geol. Ass. xviii (4), pp. 193-296, pls. 17-40.
- SCHRAMMEN. (46, 47) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).
- SCHUBERG. [See CLAUS & GROBBEN (4).]
42. SCHEFOTIEFF, A. Zur Organisation von Rhabdopleura. Bergens Mus. Aarbog (1), No. 2, pp. 1-21, with 3 pls.
43. SCHULZE, F. E. Hexactinellida. Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition auf dem Dampfer "Valdivia," 1898-1899. Band iv. In 2 parts, 266 pp., 52 pls. with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 813-817.
- SCHULZE. (48) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
44. SCHÜTZE, E. Die Fauna der schwäbischen Meeresmolasse. I Teil, Spongien und Echinodermen. Jahresh. Ver. Württemb. lx, pp. 147-155.
Reprinted in Mt. Nat.-Kab. Stuttgart xxvi, pp. 147-158.

45. *SEELY, H. M. Some Sponges of the Chazy formation. Vermont, Rep. Geol. Burlington iii, 1902, pp. 151-161, with 1 pl.
SOLLAS. (49) Zool. Rec. 1903. Abstract by MAAS (33), and Ann. Nat. Hist. p. 67, xii.
46. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoo-géographique indépendante. (In Russian.) Zapiski Kiev. Obshch. xviii, pp. 1-487.
47. SZYMAŃSKI, J. M. Zur Anatomie und Systematik der Hornschwämme des Mittelmeeres. Zool. Anz. xxvii, 1903-04, pp. 445-449.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 344.
48. *——. Hornschwämme von Aegina und Brioni bei Pola. Inaug. Dissert. Breslau, 52 pp., 9 figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 549, 550.
THEILE. (50, 51) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).
49. THUM, E. Bericht über Eine Sammlung trockener Chalcineen-Skelete aus dem Brüsseler Museum. Ann. Soc. malac. Belgique. Mémoires. pp. 9-21, with text-figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 431.
50. TOPSENT, E. Spongiaires des Açores. Résultats des Camp. Scien. Prince Monaco. Fasc. xxv, 263 pp., 18 pls., with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 550, 551.
51. —. *Sarostegia oculata*, Hexactinellide nouvelle des Îles du Cap-Vert. Bull. Mus. Monaco, No. 10. pp. 1-8, with 3 figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 431.
52. —. *Heteroclathria hallezi*, type d'un genre nouveau d'Ectyonines. Arch. Zool. exp. ii (6), pp. 93-98, with 2 figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 483.
53. —. Notes sur les Éponges du Travailleur et du Talisman. I. *Hexactinella filholi*, nov. sp. Bull. Mus. Paris No. 2, pp. 62-66.
- 53A. —. Notes sur les Éponges du Travailleur et du Talisman. II. *Hexactinella grimaldii* Topsent, *Malacosaccus unguiculatus* F. E. Schulze, *Regadrella phoenix* O. Schmidt. T. c. No. 4, pp. 195-200.
54. —. Notes sur les Éponges du Travailleur et du Talisman. III. *Leucopsacus scoliodocus* Ij., var. *retroscissus*; *Sarostegia oculata* Tops. T. c. No. 6, pp. 372-378.
——. (52) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
URBAN. (53) Zool. Rec. 1903 Spong. Notice by MAAS (33).
55. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Danmarks geol. Unders. iii, No. 2, p. 78.
56. *VANHÖFFEN, E. Die Tierwelt des Südpolargebiets. Zeitschr. Ges. Erkunde. Berlin pp. 362-370.
57. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Denk. Ges. Jena. Fest. Hæckel, pp. 161-163.
58. WELTNER, W. Bericht über die Leistungen in der Spongiologie während des Jahres 1902. Arch. Naturg. ii, Heft. 3, 1897 [1904], pp. 301-340.
59. —. Die Spongien im "International Catalogue of Scientific Literature." Zool. Anz. xxvii, 1903-04, pp. 788, 789.

60. WILSON, H. V. Sponges. Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross" during 1891. Mem. Mus. Comp. Zool. Harv. Coll. xxx, No. 1, 161 pp., 26 pls., with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 817, 818.

II. BIOLOGY.

A. EVOLUTION (PHYLOGENY, VARIATION, &c.).

- Phylogenetic relation between *Lyssacina* and *Dictyonalia*: IJIMA (24) p. 211.—Descent Theory illustrated by Sponges: LENDENFELD (28).—Variation in Siliceous sponges, remarks on, pp. 8-11; distinction of species in sponges, remarks on: WILSON (60) pp. 11, 12.

B. MORPHOLOGY.

(i) General Accounts.

- Brief general account of Sponge morphology: CLAUS & GROBBEN (4) pp. 249-252.

(ii) External Characters.

- Lichen-like growth of *Spongilla lacustris*: GILLOT (13).—Conical elevations on surface of *Acanthascus cactus* F. E. S.: IJIMA (24) pp. 144, 145.—Size of body, body-form and external characters in general of Hexactinellids: SCHULZE (43) pp. 185-190.—Pedunculate form of body in *Hyalonema pedunculatum*, p. 19; shrub-like habitus of *Sclerothamnopsis compressa* resembling that of hitherto unique *Sclerothamnus clausii* M.: WILSON (60) p. 84.

(iii) Anatomy of the Soft Tissues. Canal-System.

- Porosphæra*, canal-system of: HINDE (18) pp. 17, 18.—Soft parts of *Acanthascus alani* Ij., pp. 159, 160, of *A. cactus* F. E. S., pp. 154-158, of *Aulosaccus mitsukurii* Ij., pp. 126, 127, of *A. schulzei* Ij., pp. 111, 112, of *Crateromorpha corrugata* Ij., p. 79-82, of *C. meyeri* J. E. G., pp. 59, 60, of *C. meyeri tuberosa* Ij., p. 69, of *C. pachyactina* Ij., p. 75, of *Hyalascus giganteus* Ij., pp. 101-103, of *H. sagamiensis* Ij., pp. 89, 90, of *Lanuginella pupa*, pp. 14-16, of *Rhabdocalyptus capillatus* Ij., pp. 287-291, of *R. victor* Ij., pp. 251-253, of *Scyphidium longispina*, pp. 29-31, of *Staurocalyptus entacanthus*, n. sp., pp. 200-202, of *S. glaber* Ij., pp. 212, 213, of *Vitrollula fertilis*, pp. 43-46: IJIMA (24).—Soft parts of Hexactinellids: SCHULZE (43) pp. 188-197.—Soft parts of horny sponges: SZYMAŃSKI (47).—Similarity between main afferent and efferent canals and their apertures in *Pecillastra tricornis*, p. 102; Sollas' membrane present in *Pecillastra* and *Penares*, pp. 103, 107, 113; Character of sieve-plate region in *Regadrella delicata*, p. 36: WILSON (60).

(iv) Skeletal System.

- (a) General Accounts.—Brief account of sponge spicules: CLAUS & GROBBEN (4) p. 251.—Spiculation of *Leucosolenia complicata*, *L. variabilis*, *L. botryoides*, full description of: MINCHIN (36) pp. 363-370, 376-383, 387-391.—Spiculation of sponges in general, remarks on: TOPSENT (50) pp. 14-16.

(b) **Material of the Skeleton.**—Spicule-sheaths in Hexactinellids, pp. 204–210; Chemical nature of spicule-substance in Hexactinellids, pp. 219–221; Structure of spicules in Hexactinellids, pp. 221–243: SCHULZE (43).

(c) **Morphology, Development and Nomenclature of Skeletal Elements.**—Macrodiscohexasters of *Aulosaccus schulzei* Ij., pp. 114–117; Spicules (gastralia) present on surface of excurrent canals in *Crateromorpha meyeri* J. E. G., called Canalaria, p. 65; Degenerate oxyhexasters with less than six terminal points in *Hyalascus sagamiensis* Ij., p. 95; Hexactinose oxyhexasters in *Hyalascus similis*, n. sp., pp. 99, 100; Hexactinellid scleroblast-nuclei in *Rhabdocalyptus capillatus* Ij., p. 290; Siliceous reticular bodies in *Staurocalyptus glaber* Ij., pp. 210, 211; Spicules (stauroactins) in the larva of *Vitrollula fertilis*, pp. 52, 53: IJIMA (24).—Huge basal spicule of *Monorhaphis chuni*, n. g., n. sp., pp. 112, 113; Intracellular development of siliceous spicules, pp. 243–254: SCHULZE (43).—Structure of discohexasters in *Caulophacus schulzei* suggests evolution of the hexaster from the hexact, pp. 48, 49; Degeneration of the uncinata into the oxydiact in *Hexactinella labyrinthica*, p. 81; Reticular skeletal masses in *Hexactinella labyrinthica*, p. 79; Pathological amphidiscs (hexacts with additional rays) in *Hyalonema pateriferum*, p. 32; Peculiar dichotriænes of *Penares foliaformis* approach shape of Lithistid phyllotriæne, p. 113; Arrangement of axial canals in scopulæ of *Sclerothamnopsis* indicates equivalence to branched diacts, p. 86; Protriænes of *Thenea* are modified dichotriænes, p. 89; Metasters intermediate between spirasters and euasters in *Thenea pyriformis*, p. 100; Spicule terminology, remarks on, pp. 13, 14: WILSON (60).—Spicules in larva of *Thoosa armata* T.: TOPSENT (50) pp. 110, 111.

(d) **Skeletal Anatomy.**—Hexactinellid spicules, geological remains of: CLARKE (3).—*Porosphæra*, skeleton of: HINDE (18) pp. 14–17.—Chalineen-skelete: THUM (49).—Spiculation of *Malacosaccus floricomatus* T.: TOPSENT (50) pp. 35–38.—Reticular skeletal septa cross sponge cavity in *Euplectella* and *Chonelasma*: WILSON (60) pp. 34, 74.

(v) *Histology.*

(a) **General Accounts.**—Histology of *Lanuginella pupa*, pp. 14–16, of *Rhabdocalyptus capillatus* Ij., pp. 288–290, of *R. victor* Ij., pp. 252, 253, of *Scyphidium longispina*, pp. 29–31, of *Vitrollula fertilis*, pp. 44–46: IJIMA (24).—Histology of Hexactinellids: SCHULZE (43) pp. 197–219.

(b) **Histology of Special Organs or Classes of Cells.**—Thesocytes and rosette-like bodies in *Acanthascus cactus* F. E. S., pp. 157, 158; Archæocytes of *Lanuginella pupa*, p. 16; Archæocytes, thesocytes, and peculiar bodies in *Scyphidium longispina*, pp. 30, 31; Thesocytes of *Staurocalyptus entacanthus* n. sp., pp. 201, 202; Archæocytes of *Vitrollula fertilis*, pp. 44, 45; Choanocytes of *Vitrollula fertilis*, p. 44: IJIMA (24).—Thesocytes of Hexactinellids, pp. 210–213; Scleroblasts in Hexactinellids, pp. 204–210: SCHULZE (43).

C. PHYSIOLOGY.

(i) **General Accounts.**—Vacant.

(ii) **Particular Functions.**—Nutrition in Sponges: COTTE (6) pp. 776–780.

D. BIONOMICS.

Similarity of external appearance between certain Doris and Sponges : CUENOT (7) p. 4.—Actinians commensal on sponges : DUERDEN (9).—Molluscan eggs contained in tissues of sponges and destruction of mollusc shells by acid secreted by a siliceous sponge : GRUVEL (15).—Pearls originated by boring sponges, such as *Clione* : HERDMAN (17).—Development of Calcareous Sponges in water deprived of calcium salts : MAAS (31, 32).—Influence of local conditions on coloration of sponges, remarks on : TOPSENT (50) p. 17.—Mutual attachment of deep-sea Hexactinellids : WILSON (60) pp. 43, 50, 51.

E. REPRODUCTION AND DEVELOPMENT.

(i) *Germ-Cells, Fertilization.*

Spermatogenesis and Oogenesis in sponges : GÖRICH (14).—Ova and sperm-cells of Hexactinellids : SCHULZE (43) pp. 215–219.

(ii) *Embryology.*

(a) **General Accounts.**—Brief account of sponge embryology : CLAUD & GROBBEN (4) p. 253.

(b) **Early stages, larvae, metamorphosis and post-larval development.**—*Porosphaera*, manner of growth : HINDE (18) pp. 11–14.—Larvæ of *Vitrollula fertilis* : IJIMA (24) pp. 46–55.—Larvæ of *Sycandra setosa* reared in water deprived of calcium salts : MAAS (32).—Larvæ of Hexactinellids : SCHULZE (43) pp. 215–218.—Larvæ of *Thoosa armata* T. : TOPSENT (50) pp. 110, 111.—Development of complex *Eurete* and *Farrea* colonies from simple cup-like forms : WILSON (60) pp. 64, 65.

(iii) *Asexual Reproduction.*

(a) **Fission and Vegetative Budding.**—Budding in *Acanthascina*, pp. 129, 143, in *Rhabdocalypus mollis* F. E. S., pp. 258, 259, in *Scyphidium longispina*, p. 22 : IJIMA (24).

(b) **Germinal budding.**—Origin of the larva from archæocyte-congeries in *Vitrollula fertilis* : IJIMA (24) pp. 53–55.—Gemmules of *Tetilla longipilis*, n. sp. : TOPSENT (50) p. 98.

F. MISCELLANEOUS.

Bibliography.—Record of Sponge literature for 1903 : BIBL. ZOOL. ix, pp. 9, 57, 190, 304, 423.—Titles of 27 memoirs upon sponges, with abstracts : MAAS (33).—List of memoirs on sponges published in the years 1901, 1902, with summaries under different headings of the more important additions to scientific knowledge of the Porifera : WELTNER (58).—Abstracts of certain sponge memoirs (1900–1904) : LENDENFELD (30).

Technique.—Methods of displaying spicules of fossil siliceous sponges : LENDENFELD (29).—Methods of preparing sponges : MARPMANN (35).—Method of preparation of calcareous spicules : MINCHIN (36) p. 356.

Economics.—Full account of the Sponge fishery of Florida in 1900 : COBB (5).

Classification.—Classification, general remarks on: TOPSENT (50) pp. 17-19.

Chemistry of Sponges.—Spongosterin from *Suberites*, &c.: HENZE (16).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

α. MARINE.

(i) **General.**—General distribution of Sponges, remarks on: M'INTOSH (36).—Horizontal and bathymetrical distribution of Hexactinellids: SCHULZE (43) pp. 257-265.

(ii) **Atlantic Ocean and Adjacent Seas.**—Golfe de Gascogne, sponges from: GRUVEL (15).—Lake Baical, *Veluspa baicalensis*, D., *V. fusifera*, *Spongilla microgemma*, S., *Lubomyrskia irregularis*, S., from: IAKHONTOFF (23) p. 3.—Plymouth, sponge fauna of: MAR. BIOL. ASS. (34).—Atlantic Ocean, Hexactinellids from: SCHULZE (43).—Ponto-Aralo-Kaspian marine basin, sponges from: SOWINSKY (46) pp. 173, 289, 328.—Aegina and Brioni bei Pola, horny sponges from: SZYMAŃSKI (48).—Azores archipelago, lists of sponges obtained from: TOPSENT (50).—Îles du Cap-Vert, *Sarostegia oculata* from: TOPSENT (51).

(iii) **Indian Ocean and Adjacent Seas.**—Indian Ocean, Hexactinellids from: SCHULZE (43).

(iv) **Pacific Ocean and Adjacent Seas.**—Sagami Sea, Hexactinellids from: IJIMA (24).—San Diego, Southern California, sponges from: KOFOID (27).—West coasts of Mexico, Central and South America and off the Galapagos Islands, sponges collected from, pp. 5, 6; *Thenea fenestrata* now recorded for the Pacific, p. 91: WILSON (60).

(v) **Arctic Seas.**—Vacant.

(vi) **Antarctic Seas.**—Antarctic Seas, calcareous sponges from: VANHÖFFEN (56).

β. FRESHWATER SPONGES.

Spongilla lacustris from Chambilly: GILLOT (13).

B. GEOLOGICAL.

(i) GENERAL.

Vacant.

(ii) CAINOZOIC.

Swabian sandstone, sponges from: SCHUTZE (44).—Diluvial deposits of Lübeck, *Spongilla lacustris*, L. from: RANGE (39) p. 238.—Fossil (Cainozoic) sponges from Victoria, South Australia and Tasmania: DENNANT & KITSON (8) p. 136.

(iii) MESOZOIC.

Untern Kreide im westschweizerischen Jura, sponges from: BAUMBERGER (1) p. 21.—Muschelkalk, *Scyphia roemeri*, n. sp., *S. sp.*, *S. caminensis*, from the: ECK (10).—Cretaceous rocks, New South Wales, *Purisiphonia clarkei*,

B. from: ETHERIDGE (11).—Oolitic and cretaceous rocks south of Scarborough, sponges from: FOX-STRANGWAYS (12) p. 40 et seq.—English Chalk, zonal distribution of species of *Porosphaera* in: HINDE (18) pp. 6–10.—*Cephalites longitudinalis*, *Pharetrospongia strahani*, *Plinthosella squamosa*, *Plocoscyphia convoluta*, *P. sp.*, *Porosphaera globularis*, *P. nuciformis*, *P. patelliformis* from the Surrey Chalk: HINDE (19).—English Chalk, *Placotrema cretaceum*, *Ventriculites decurrens*, *V. impressus*, *V. alcyonoides*, *V. radiatus*, *Plocoscyphia*, *Camerospongia*, *Porosphaera pileolus*, *P. sp.* from the: HOLMES (20).—Kreideformation, fossil sponges from the: JAHN (25).—Upper, Lower and Middle English Chalk, list of fossil sponges from: JUKES-BROWNE & HILL (26).—Chalk of Yorkshire Coast, *Ventriculites radiatus*, *V. cribrus*, *V. impressus*, *V. infundibuliformis*, *V. convolutus*, *V. decurrens*, *Plocoscyphia convoluta*, *Porochonia simplex*, *Coscinopora infundibuliformis*, *Guettardia stellata*, *Leptophragma murchisoni*, *Cleptochium agaricoides*, *Callopegma obconicum*, *Heterostinia obliqua*, *Siphonia konigi*, *Stelletta inclusa*, *Cliona cretacea*, *Porosphaera globularis*, *P. globularis* var. *nuciformis*, *P. pileolus*, *P. pileolus* var. *patelliformis*, *P. pileolus* var. *arrecta*, from: ROWE (41) pp. 292, 293.—Flint, Denmark, fossil sponges from: USSING (55).—Solnhofener Plattenkalke, *Ammonella quadrata*, **n. g.**, **n. sp.**, *Phyllospongia lumbricaria*, *P. acuminata*, *P. elongata*, *P. rubarticulata*, *P. latifrons*, *P. varius*, from the: WALTHER (57) pp. 162, 163.

(iv) PALÆOZOIC.

Silurian of Rio Trombetas, Para, Brazil, sponges from: CLARKE (3).

IV. SYSTEMATIC.

[A name of a species, followed only by a reference to a name from the list of titles, is a record of occurrence pure and simple. The approximate locality (or horizon) can be ascertained by looking up the author's name attached to the particular species in the above (section III).]

A. PORIFERA, GENERAL.

B. CALCAREA.

(i) HOMOCÆLA.

Family CLATHRINIDÆ.

Clathrina coriacea, *C. lacunosa*: MAR. BIOL. ASS. (34).

Family LEUCOLENIIDÆ.

Leucosolenia botryoides, *L. complicata*, *L. variabilis*: MAR. BIOL. ASS. (34).—*L. complicata*, *L. variabilis*, *L. botryoides* redefined and re-described in full: MINCHIN (36) pp. 360–394.

(ii) HETEROCÆLA.

Family SYCETIDÆ.

Sycon seu *Sycandra raphanus*, spermatogenesis in: GÖRICH (14).—*S. compressum*, *S. coronatum*: MAR. BIOL. ASS. (34).—*S. setosa* grown in water deprived of calcium salts: MAAS (31, 32).—*S. setosum*, *S. coronata*: SOWINSKY (46) p. 289.

+*Tremacystia d'orbigny*, *T. siphonoides*: JUKES-BROWNE & HILL (26) p. 505.

Family PHARETRONIDÆ seu PHARETRONES.

- †*Bactronella parvula*, *B. australis*: DENNANT & KITSON (8).
 †*Blastinia aspera*: FOX-STRANGWAYS (12) p. 40.
 †*Corynella* sp.: JAHN (25).
 †*Discoelia peronni*: BAUMBERGER (1) p. 21.
 †*Elasmoiera sequana*, *E. crassa*: BAUMBERGER (1) p. 21.
 †*Elasmostoma consobrinum*, *E. crassum*, *E. scitulum*, *E. sp.*: JUKES-BROWNE & HILL (26) p. 504.—*E. sp.*: JAHN (25).
 †*Holcospongia* (*Spongia*) *floriceps*, *H. polita* (*Stellispongia corallina*): FOX-STRANGWAYS (12) p. 40.
 †*Manon marginatum*: JUKES-BROWNE & HILL (26) p. 506.
 †*Oculospongia* sp.: BAUMBERGER (1) p. 21.
 †*Peronidella recta*, H.: FOX-STRANGWAYS (12) p. 40.
 †*Pharetrospongia strahani*: JUKES-BROWNE & HILL (26) p. 504.—*P. strahani*: HINDE (19).
 †*Plectroninia balbi*: DENNANT & KITSON (8).
 †*Porosphera*, history, and full description of genus and species, pp. 1–25; *P. globularis*, *P. nuciformis*, *P. woodwardi*, *P. pileolus* redescribed, pp. 19–23; *P. patelliformis*, n. sp., *P. arrecta*, n. sp. described, pp. 23, 24: HINDE (18).—*P. globularis*, *P. nuciformis*, *P. patelliformis*: HINDE (19).—*P. pileolus*, *P. sp.*: HOLMES (20).—*P. globularis*: JAHN (25).—*P. globularis*, *P. globularis* var. *nuciformis*, *P. pileolus*, *P. pileolus* var. *patelliformis*, *P. pileolus* var. *arrecta*: ROWE (41) p. 293.
 †*Siphonocelia crassa*: BAUMBERGER (1) p. 21.
Sparsispongia gemmata: BAUMBERGER (1) p. 21.
 †*Spongia* [*Holcospongia*] *floriceps*: FOX-STRANGWAYS (12) p. 49.
 †*Stellispongia salevensis*: BAUMBERGER (1) p. 21.
 †*Tretocalia pezica*: DENNANT & KITSON (8).
 †*Tremospongia* sp. BAUMBERGER (1) p. 21.
 †*Woodwardi*: JUKES-BROWNE & HILL (26) p. 505.

C. HEXACTINELLIDA.

(i) LYSSACINA.

Hexasterophora, characters of sub-order: SCHULZE (43) p. 172.

Amphidiscophora, characters of suborder: SCHULZE (43) pp. 180, 181.

Family EUPLECTELLIDÆ.

Euplectellidæ, characters of family with list of genera: SCHULZE (43) pp. 172, 173.

Euplectella, characters of genus, p. 132; *E. suberea* W. T., redescribed, pp. 9–15; *E. nobilis* F. E. S. n. sp., described, pp. 15–17; *E. aspergillum* R. O., redescribed, pp. 17–21; *E. (?) simplex* F. E. S., redescribed, pp. 21, 22: SCHULZE (43).—*E. suberea* W. T., redescribed: TOPSENT (50) pp. 38, 39.—*E.*, sp., described: WILSON (60) pp. 33, 34.

Holascus, characters of genus, p. 130; *H. tenuis* F. E. S. n. sp., described, pp. 3–7; *H. obesus* F. E. S. n. sp., described, pp. 7, 8; *H. fibulatus* F. E. S., redescribed, pp. 8, 9: SCHULZE (43).

Malacosaccus floricomatus T., redescribed: TOPSENT (50) pp. 33–38.—*M. unguiculatus* F. E. S., redescribed: TOPSENT (53A).

Regadrella, characters of genus, p. 134; *R. (?) phœnix* O. Sch., described, pp. 22, 23: SCHULZE (43).—*R. phœnix* Sch., redescribed: TOPSENT (50) pp. 39, 40; (53A).—*R.*, sp., described, pp. 35, 36; *R. delicata*, n. sp., diagnosed and described, pp. 36–42: WILSON (60).

Family HERTWIGIDÆ.

Hertwigia, characters of genus, p. 135; *H. falcifera* O. Sch., redescribed, pp. 23, 34: SCHULZE (43).

Family CAULOPHACIDÆ.

Caulophacidæ, characters of family with list of genera: SCHULZE (43) p. 173, 174.

Caulophacus, characters of genus, p. 137; *C. valdiviæ* F. E. S., redescribed, pp. 25-28: SCHULZE (43).—*C. schulzei*, n. sp., diagnosed and described, pp. 43-50; *C.*, sp., described, p. 50: WILSON (60).

Family HYALONEMATIDÆ.

Compsocalyx, characters of n. g., pp. 164, 165; *C. gibberosa* F. E. S., n. sp., described, pp. 99-103: SCHULZE (43).

Hyalonematidæ, characters of family with list of genera, p. 181: SCHULZE (43).

Hyalonema, characters of genus, p. 162; *H. thomsonis* W. M., redescribed, pp. 67-69; *H. calix* F. E. S., n. sp., described, pp. 69-73; *H. somalicum* F. E. S., n. sp., described, pp. 73, 74; *H. globiferum* F. E. S., redescribed, pp. 75-77; *H. solutum* F. E. S., n. sp., described, pp. 77, 78; *H. valdiviæ* F. E. S., n. sp., described, pp. 78-80; *H. rapa* F. E. S. juv., redescribed, pp. 80-82; *H. validum* F. E. S., n. sp., described, pp. 82, 83; *H. tulipa* F. E. S., n. sp., described, pp. 83-85; *H. simile* F. E. S., n. sp., described, pp. 85-88; *H. coniforme* F. E. S., n. sp., described, pp. 88, 89; *H. urna* F. E. S., n. sp., described, pp. 89-91; *H. apertum* F. E. S., redescribed, pp. 91-95; *H. molle* F. E. S., n. sp., described, pp. 95, 96; *H. proximum* F. E. S., n. sp., described, pp. 64-67: SCHULZE (43).—*H. ovuliferum* F. E. S., redescribed, pp. 16-19; *H. pedunculatum*, n. sp., diagnosed and described, pp. 19-22; *H. bianchoratum*, n. sp., diagnosed and described, pp. 22-25; *H.*, species diversæ described, pp. 25-28; *H. pateriferum*, n. sp., diagnosed and described, pp. 28-33: WILSON (60).—*H. thomsoni* W. M., redescribed, p. 31; *H. infundibulum* T., redescribed, p. 32: TOPSENT (50).

Pheronema, characters of genus, p. 151; *P. carpenteri* (W. T.), redescribed, pp. 50-52; *P. raphanus* F. E. S., redescribed, pp. 52-58: SCHULZE (43).—*P. grayi* S. K., redescribed, pp. 29-31: TOPSENT (50).

Platylistrum, n. g., characters of genus, p. 165; *P. platessa* F. E. S., n. sp., described, pp. 59-64: SCHULZE (43).

†*Stauractinella cretacea*: JUKES-BROWNE & HILL (26), p. 508.

Family SEMPERELLIDÆ.

(SEMPERELLINÆ removed from HYALONEMATIDÆ to form a distinct family.)

Semperellidæ, characters of family with list of genera: SCHULZE (43) p. 181.

Semperella, characters of genus, p. 167; *S. cucumis* F. E. S., redescribed, pp. 103-110; *S. spicifera* F. E. S., redescribed, pp. 110-112: SCHULZE (43).

Monoraphis, characters of n. g., pp. 167, 168; *M. chuni* F. E. S., n. sp., described, pp. 112-121; *M. divis* F. E. S., n. sp., described, pp. 121-125: SCHULZE (43).

Family LEUCOPSACIDÆ.

Leucopsacidæ, characters of family with list of genera, p. 175 : SCHULZE (43).

Leucopsacus scoliodocus Ij., n. var. *retroscissus*, described : TOPSENT (54).
Chaunangium, characters of n. g., p. 138 ; *C. crater* F. E. S., n. sp., described, pp. 31-33 ; *C. sp.*, F. E. S., described, pp. 33, 34 : SCHULZE (43).

Placopegma, characters of genus, p. 137 ; *P. solutum* F. E. S., redescribed, pp. 28-31 : SCHULZE (43).

Family ROSSELLIDÆ.

Diagnosis of the family, subdivided into *Lanuginellinæ*, *Rossellinæ*, and *Acanthascinæ* : IJIMA (24) pp. 1, 2 ; SCHULZE (43) pp. 175, 176.

Rossellinæ, diagnosis of sub-family and key to genera : IJIMA (24) pp. 16-19 ; SCHULZE (43) p. 176.

Lanuginellinæ, diagnosis of sub-family and key to genera and species : IJIMA (24) pp. 2, 3 ; SCHULZE (43) p. 176.

Acanthascinæ, diagnosis of sub-family, general organization and key to genera : IJIMA (24) pp. 127-139 ; SCHULZE (43) p. 177.

Acanthascus F. E. S., diagnosis of genus with key to species, pp. 139, 140 ; *A. cactus* F. E. S., redescribed, pp. 140-158 ; *A. alani* Ij., redescribed, pp. 158-162 : IJIMA (24).

Asconema setubalense S. K., redescribed : TOPSENT (50) p. 41.

Aulosaccus Ij., diagnosis of genus with key to species, pp. 107-110 ; *A. mitsukurii* Ij., redescribed, pp. 117-127 ; *A. schulzei* Ij., redescribed, pp. 110-117 : IJIMA (24).

Bathydorus levis spinosus, n. subsp., diagnosed and described : WILSON (60) pp. 51-54.

Bolosoma, nom. nov., substituted for *Placosoma* : IJIMA (24) p. 305.

Crateromorpha J. E. Gray, diagnosis of genus and key to species, pp. 55-57 ; *C. meyeri* J. E. G., redescribed with descriptions of two new sub-species *C. m. tuberosa* Ij., n. subsp. and *C. m. rugosa* Ij., n. subsp., pp. 57-74 ; *C. pachyactina* Ij., redescribed, pp. 74-78 ; *C. corrugata* Ij., redescribed, pp. 78-86 : IJIMA (24).

Hyalascus Ij., diagnosis of genus and key to species, pp. 87, 88 ; *H. sagamiensis* Ij., redescribed, 88-96 ; *H. giganteus* Ij., redescribed, pp. 100-107 ; *H. similis*, n. sp., described, pp. 96-100 : IJIMA (24).

Lanuginella pupa O. S., redescribed : IJIMA (24) pp. 3-16, pl. i.

Rhabdocalyptus F. E. S., diagnosis of genus and key to species, pp. 236-238 ; *R. victor* Ij., redescribed, pp. 238-253 ; *R. unguiculatus*, n. sp., described, pp. 268-276 ; *R. capillatus* Ij., redescribed, pp. 276-291 ; *R. mollis* F. E. S., redescribed, pp. 253-268 : IJIMA (24).—*R.*, characters of genus, p. 140 ; *R. baculifer* F. E. S., n. sp., described, pp. 34-36 : SCHULZE (43).

Scyphidium F. E. S., diagnosis of genus and key to species, pp. 20, 21 ; *S. namiyei*, n. nom. for *Vitrollula namiyei* Ij., redescribed, pp. 32-37 ; *S. longispina*, n. nom. for *Rossella longispina* Ij., redescribed, pp. 22-31 : IJIMA (24).

Staurocalyptus Ij., diagnosis of genus and key to species, pp. 162-168 ; *S. reperi* F. E. S., redescribed, pp. 168-172 ; *S. doublingi* L. M. L., redescribed, pp. 172-175 ; *S. tubulosus*, n. sp., described, pp. 175-180 ; *S. affinis*, n. sp., described, pp. 180-191 ; *S. entacanthus*, n. sp., described, pp. 191-202 ; *S. heteractinus* Ij., redescribed, pp. 218-222 ; *S. pleorhaphides* Ij., redescribed, pp. 222-230 ; *S.* (sp. ?), described, pp. 231-236 ; *S. microchetus* Ij., redescribed, pp. 202-206 ; *S. glaber* Ij.,

redescribed, pp. 207-218: IJIMA (24).—*S.*, sp., described, WILSON (60) pp. 54-56.

Vitrollula Ij., characters of the genus, p. 37; *V. fertilis* Ij., redescribed, pp. 38-55: IJIMA (24).

(ii) *DICTYONINA*.

Family COSCINOPORIDÆ.

Coscinoporidæ, characters of family: SCHULZE (43) p. 178.

Bathysiphus, sp., described: WILSON (60) pp. 75-77.

Chonelasma schulzei, T. redescribed, pp. 51-53; *C. ijimai* T., redescribed, pp. 53-55: TOPSENT (50).—*C. calyx* F. E. S. (sp.?), redescribed: WILSON (60) pp. 74, 75.

+*Coscinopora infundibuliformis*, *C. quincuncialis*, *C. sp.*: JUKES-BROWNE & HILL (26) p. 506.—*C. infundibuliformis*: ROWE (41).

+*Guettardia stellata*: ROWE (41).—*G. angularis*, *G. stellata*: JUKES-BROWNE & HILL (26) p. 506.

+*Leptophragma murchisoni*: ROWE (41).—*L. fragilis*, *L. murchisoni*: JUKES-BROWNE & HILL (26) p. 506.

+*Pleurostoma radiatum*: JUKES-BROWNE & HILL (26) p. 507.—*P. bohemicum*, *P. scyphus*: JAHN (25).

Family TRETICALYCIDÆ (formerly TRETODICTYIDÆ, Schulze).

Treticalycidæ (formerly *Tretodictyidæ* F. E. S.), characters of family with list of genera: SCHULZE (43) pp. 179, 180.

Hexactinella labyrinthica, n. sp., diagnosed and described, pp. 77-82; *H. ventilabrum* Carter (sp.?), described, pp. 82, 83; *H. tubulosa* F. E. S. (sp.?), described, pp. 83, 84: WILSON (60).—*H. filholi*, n. sp., described: TOPSENT (53).—*H. grimaldii* T., redescribed: TOPSENT (53A).

Sclerothamnopsis compressa, n. g. et sp., diagnosed and described: WILSON (60) pp. 84-87.

Family AULOCYSTIDÆ.

Characters of family: SCHULZE (43) p. 180.

Family DACTYLOCALYCIDÆ.

Characters of family, with list of genera: SCHULZE (43) p. 180.

Auloplax, characters of genus, pp. 148, 149; *A. auricularis* F. E. S., redescribed, pp. 47-50: SCHULZE (43).

Family EURETIDÆ (includes FARREIDÆ).

Characters of family with list of genera: SCHULZE (43) pp. 177, 178.

+*Ammonella quadrata*, n. g., n. sp., described: WALTHER (57) pp. 162, 163.

+*Craticularia vulgata*, *C. subserviata*: JAHN (25).—*C. fittoni*, *C. subseriata*, *C. sp.*: JUKES-BROWNE & HILL (26) p. 506.

+*Cribrospongia subreticulata*: JAHN (25).

Eurete, characters of genus, p. 143; *E. sp.*, described, pp. 37, 38: SCHULZE (43).—*E. erectum tubuliferum*, n. subsp., diagnosed and described,

- pp. 63-68; *E. erectum mucronatum*, n. subsp., diagnosed and described, pp. 68, 69; *E. erectum gracile*, n. subsp., diagnosed and described, pp. 69-72: WILSON (60).—*E. alicei* T., redescribed, p. 45: TOPSENT (50).
- Farrea*, characters of genus: SCHULZE (43) p. 142.—*F. occa* B., n. var., *laminaris*, redescribed, p. 43; *F. wellneri* T., redescribed, p. 43: TOPSENT (50).
- F. occa claviformis*, n. subsp., diagnosed and described, pp. 57-59; *F. mexicana*, n. sp., diagnosed and described, pp. 60-62; *F.* sp., described, p. 62: WILSON (60).
- Ramella*, n. g., characters of, p. 144; *R. tubulosa* F. E. S., n. sp., described, pp. 38, 39: SCHULZE (43).
- Sarostegia oculata*, n. g., n. sp., described: TOPSENT (51).—*S. oculata* T., redescribed: TOPSENT (54).
- +*Strephinia convoluta*, *S. retiformis*: JUKES-BROWNE & HILL (26) p. 508.
- +*Verrucocalia tubulata*, *V. vectensis*, *V.* sp.: JUKES-BROWNE & HILL (26) p. 509.

Family MELLITTIONIDÆ (APHROCALLISTIDÆ).

- Aphrocallistidæ*, characters of family: SCHULZE (43) pp. 178, 179.
- Aphrocallistes*, characters of genus, p. 148; *A. beatrix* J. E. G., redescribed, pp. 39-47: SCHULZE (43).—*A. azoricus* T., redescribed: TOPSENT (50) pp. 48-50.—*A. vastus* F. E. S. (sp.?), redescribed: WILSON (60) p. 73.—*A.* sp.: JUKES-BROWNE & HILL (26) p. 505.
- +*Stauroinema carteri*, *S. lobatum*, *S. planum*: JUKES-BROWNE & HILL (26) p. 508.

Family MÆANDROSPONGIDÆ.

- +*Callodictyon angustatum*: JUKES-BROWNE & HILL (26) p. 505.
- +*Camerosporgia*: HOLMES (20).—*C. aperta*, *C. campanulata*, *C. capitata*, *C. subrotunda*: JUKES-BROWNE & HILL (26) p. 505.
- +*Diplodictyon bayfieldi*: JUKES-BROWNE & HILL (26) p. 506.
- +*Etheridgea* sp.: JUKES-BROWNE & HILL (26) p. 506.
- +*Plocoscyphia convoluta*, *P.* sp.: HINDE (19).—*P.*: HOLMES (20).—*P. pertusa*: JAHN (25).—*P. convoluta*, *P. elegans*, *P. fenestrata*, *P. flexuosa*, *P. foliacea*, *P. labrosa*, *P. meandrina*, *P. labyrinthica*, *P. reticulata*, *P. subruta*, *P. vagans*: JUKES-BROWNE & HILL (26) pp. 507, 508.—*P. convoluta*: ROWE (41).
- +*Porochonia simplex*: JUKES-BROWNE & HILL (26) p. 508.—*P. simplex*: ROWE (41).
- +*Toulminia obliqua*: JUKES-BROWNE & HILL (26) p. 509.
- +*Tremabolites perforatus*: JUKES-BROWNE & HILL (26) p. 509.

Family STAURODERMIDÆ.

- +*Cincliderma quadratum*: JUKES-BROWNE & HILL (26) p. 505.
- +*Ophrystoma micrommatum*: JUKES-BROWNE & HILL (26) p. 507.
- +*Placotrema cretaceum*: HOLMES (20).—*P. cretaceum*: JUKES-BROWNE & HILL (26) p. 507.
- +*Porostomia (Porosporgia)* sp.: BAUMBERGER (1) p. 21.
- +*Purisiphonia clarkei*: ETHERIDGE (11).

Family CÆLOPTYCHIDÆ.

- +*Cæloptychium agaricoides*, *C. decimimum*, *C.* sp.: JUKES-BROWNE & HILL (26) p. 506.—*C. agaricoides*: ROWE (41).

Family VENTRICULITIDÆ.

- +*Cephalites longitudinalis*: HINDE (19).—*C. alternans*, *C. benettia*, *C. bullatus*, *C. catinifer*, *C. compressus*, *C. guttatus*, *C. longitudinalis*, *C. paradoxus*, *C. perforatus*: JUKES-BROWNE & HILL (26) p. 505.
- +*Polyplastidium racemosum*, *P. tuberosum*: JUKES-BROWNE & HILL (26) p. 508.
- +*Rhizopoterion cervicorne*: JAHN (25).
- +*Sestrocladius furcatus*: JUKES-BROWNE & HILL (26) p. 508.
- +*Sporodoscinia capax*, *S. micrommata*: JUKES-BROWNE & HILL (26) p. 508.
- +*Ventriculites decurrens*, *V. impressus*, *V. alcyonoides*, *V. radiatus*: HOLMES (20).—*V. alcyonoides*, *V. alternans*, *V. infundibuliformis*, *V. augustatus*, *V. convolutus*, *V. cribrus*, *V. decurrens*, *V. impressus*, *V. mammillaris*, *V. moniliferous*, *V. radiatus*, *V. quincuncialis* (see *Coscino-pora*), *V. simplex* (see *Porochonia*): JUKES-BROWNE & HILL (26) p. 509.—*V. marginatus*, *V. radiatus*, *V. odontostoma*: JAHN (25).—*V. radiatus*, *V. cribrus*, *V. impressus*, *V. infundibuliformis*, *V. convolutus*, *V. decurrens*: ROWE (41).

D. DEMOSPONGIÆ.

(i) *TETRAXONIDA*.

(a) Order CARNOSA.

Sub-order MICROTRIÆNOSA.

- Corticella geodioides* (Carter) T., redescribed: TOPSENT (50) pp. 77-79.
- Thrombus abyssi* (Carter) S., n. var. *niger*, described: TOPSENT (50) pp. 100-102.

Sub-order MICROSCLEROPHORA.

Family PLAKINIDÆ.

- Placinaustrella oxeata*, n. sp., described: TOPSENT (50) pp. 102, 103.

(b) Order TETRACTINELLIDA.

(1) Sub-order CHORISTIDA.

Tribe SIGMATOPHORA.

Family TETILLIDÆ.

- Chrotella amphiacantha*, n. sp., described: TOPSENT (50) pp. 96, 97.
- Craniella cranium* (Müller) S., redescribed, pp. 99, 100; *C. disigma*, n. sp., described: TOPSENT (50) p. 100.
- Tetilla longipilis*, n. sp., described: TOPSENT (50) pp. 97-99.

Tribe ASTROPHORA.

Family GEODIDÆ.

- Cydonium gigas*, nutrition in: COTTE (6).
- Erylus nummulifer* T., redescribed, pp. 71, 72; *E. granularis*, n. sp., described, pp. 72, 73; *E. mammillaris* (Schmidt) G., redescribed, pp. 73-75; *E. chavesi*, n. sp., described, p. 75: TOPSENT (50).

- Isops pachydermata* S., redescribed : TOPSENT (50) p. 67.
Geodia eosaster (Sollas) T., redescribed, pp. 67-69 ; *G. echinastrella*, n. sp., described, p. 70 ; *G. sphaerastrella*, n. sp., described, pp. 70, 71 : TOPSENT (50).—*G. stelloso* : SOWINSKY (46) p. 289.—*G. baretti* : SCHEPOTIEFF (42) p. 3.

Family STELLETTIDÆ.

- †*Ophiraphidites anastomosans* : JUKES-BROWNE & HILL (26) p. 507.
Penares foliaformis, n. sp., diagnosed and described : WILSON (60) pp. 111-114.—*P. sclerobesa* S. E. G., redescribed : TOPSENT (50) pp. 82, 83.
Pilochrota inermis, n. sp., described, pp. 79, 80 ; *P. ventricosa*, n. sp., described, pp. 80, 81 ; *P. lactea* (Carter) S., redescribed, pp. 81, 82 : TOPSENT (50).
†*Stelletta inclusa* : JUKES-BROWNE & HILL (26) p. 508 and ROWE (40) p. 293.—*S. tuberosa* T., redescribed, TOPSENT (50) pp. 75-77.
Stryphnus fortis (Vosmaer) S., redescribed : TOPSENT (50) pp. 83-85.
†*Tethyopsis cretaceus* : JUKES-BROWNE & HILL (26) p. 508.

Family THENEIDÆ.

- Thenaea fenestrata* (Sch.) S., redescribed, pp. 88-91 ; *T. echinata*, n. sp., diagnosed and described, pp. 91-94 ; *T. lamelliformis*, n. sp., diagnosed and described, pp. 95-98 ; *T. pyriformis*, n. sp., diagnosed and described, pp. 98-100 : WILSON (60).—*T. schmidtii* S., redescribed, p. 85 : TOPSENT (50).

Family PACHASTRELLIDÆ.

- TOPSENT (46) includes the *Theneidæ* and *Pachastrellidæ* in the family *Asterostreptidæ*.
Characella pachastrelloides (Carter) S., redescribed : TOPSENT (50) pp. 95, 96.
Nethea amygdaloides (Carter) T., redescribed : TOPSENT (50) p. 94.
Pecillastra compressa (Bowerbank) S., redescribed, pp. 89, 90 ; *P. symbiotica* T., redescribed, pp. 90-92 : TOPSENT (50).—*P. tricornis*, n. sp., diagnosed and described, pp. 101-105 ; *P. cribraria*, n. sp., diagnosed and described, pp. 105-110 : WILSON (60).
Pachastrella monilifera S., redescribed : TOPSENT (50) pp. 92-94.—†*P. convoluta* : JUKES-BROWNE & HILL (26) p. 507.
Sphinctrella gracilis S., redescribed, pp. 88, 89 ; *S. horrida* S., redescribed, p. 86 ; *S. ornata* S., redescribed, p. 87 : TOPSENT (50).

Family PLACOSPONGIDÆ.

- Rhaxella perforata* H. : FOX-STRANGWAYS (12) p. 40.

(2) LITHISTIDA.

Tribe HOPLOPHORA

Family CLADOPELTIDÆ.

- Siphonidium ramosum* Sch., redescribed : TOPSENT (50) p. 63.

Family CORALLISTIDÆ.

- Corallistes noli tangere* Sch., redescribed : TOPSENT (50) pp. 59, 60.
Macandrewia azorica J. E. G., redescribed, pp. 60, 61 ; *M. robusta*, n. sp., described, pp. 61, 62 ; *M. ramosa*, n. sp., described, p. 62 : TOPSENT (50).

Family TETRACLADIDÆ.

- † *Aulaxinia costata* : JUKES-BROWNE & HILL (26) p. 505.
 † *Bolospongia constricta*, *B. globata* : JUKES-BROWNE & HILL (26) p. 505.
 † *Callopegma ficoideum*, *C. obconicum*, *C. sp.* : JUKES-BROWNE & HILL (26) p. 505.—*C. obconicum* : ROWE (41).
Discodermia ramifera T., redescribed : TOPSENT (50) pp. 57, 58.
 † *Hallirhoa agariciformis*, *H. costata* : JUKES-BROWNE & HILL (26) p. 506.
 † *Jerea cordiformis*, *J. excavata*?, *J. websteri*, *J. sp.* : JUKES-BROWNE & HILL (26) p. 506.
 † *Nelumbia tuberosa*, *N. sp.* : JUKES-BROWNE & HILL (26) p. 506.
 † *Pholidocladia dichotoma*, *P. ramosa* : JUKES-BROWNE & HILL (26) p. 507.
 † *Phymatella intumescens*, *P. reticulata* : JUKES-BROWNE & HILL (26) p. 507.
 † *Phymaplectia cribrata*, *P. irregularis*, *P. scitula*, *P. spinosa* : JUKES-BROWNE & HILL (26) p. 507.
 † *Plinthosella compacta*, *P. convoluta*, *P. nodosa*, *P. squamosa*, *P. sp.* : JUKES-BROWNE & HILL (26) p. 507.—*P. squamosa* : HINDE (19).
 † *Polyjerea arbuscula*, *P. lobata* : JUKES-BROWNE & HILL (26) p. 508.
Racodiscula clava (Sch.) T., redescribed : TOPSENT (50) p. 58.
 † *Ragadinia clavata*, *R. compressa*, *R. sulcata* : JUKES-BROWNE & HILL (26) p. 508.
 † *Siphoneudea truncata* : BAUMBERGER (1) p. 21.
 † *Siphonia ficus*, *S. kœnigi*, *S. tulipa* : JUKES-BROWNE & HILL (26) p. 508.—*S. kœnigi* : ROWE (41).
 † *Thamnospongia clavellata*, *T. glabra*, *T. reticulata*, *T. sp.* : JUKES-BROWNE & HILL (26) pp. 508, 509.
 † *Thecosiphonia nobilis*, *T. turbinata* : JUKES-BROWNE & HILL (26) p. 509.
 † *Trachysycon sulcatum* : JUKES-BROWNE & HILL (26) p. 509.
 † *Turonina variabilis* : JUKES-BROWNE & HILL (26) p. 509.

Family DESMANTHIDÆ.

- Monocrepidium* T., definition of genus, p. 47 ; *M. vermiculatum* T., redescribed, p. 148 : TOPSENT (50).

Family PLEROMIDÆ.

- † *Doryderma ramosum*, *D. rœmeri*, *D. sp.* : JUKES-BROWNE & HILL (26) p. 506.
 † *Heterostinia obliqua* : JUKES-BROWNE & HILL (26) p. 506.—*H. obliqua* : ROWE (41).
 † *Isoraphinia tecta* : JUKES-BROWNE & HILL (26) p. 506.
 † *Nematinion calyculum*, *N. sp.* : JUKES-BROWNE & HILL (26) p. 507.

Tribe ANOPLIA.

Family AZORICIDÆ.

- Azorica pfeifferæ* C., redescribed : TOPSENT (50) p. 64.
 † *Jereica clava* : JUKES-BROWNE & HILL (26) p. 506.
Petromica grimaldii T., redescribed : TOPSENT (50) pp. 64-66.
 † *Verruculina astrea*, *V. miliaris*, *V. papillata*, *V. plicata*, *V. pustulosa*, *V. reussi*, *V. sp.* : JUKES-BROWNE & HILL (26) p. 509.

Family ANOMOCLADIDÆ.

†*Astylospongia præmorsa* F. R., redescribed: REMEŠ (40).

†*Scytalia fastigiata*, *S. radiciiformis*, *S. terebrata*: JUKES-BROWNE & HILL (26) p. 508.

Family RHIZOMORINIDÆ.

†*Ctenendopora callodictya* (?): JUKES-BROWNE & HILL (26) p. 505.

†*Pachinion scriptum*: JUKES-BROWNE & HILL (26) p. 507.

†*Seliscothoia explanatus*, *S. planus*: JUKES-BROWNE & HILL (26) p. 508.

†*Stachyspongia spica*: JUKES-BROWNE & HILL (26) p. 505.

†*Stichophyma tumidum*, *S. sp.*: JUKES-BROWNE & HILL (26) p. 508.

(ii) MONAXONIDA.

(a) Order HADROMERINA.

1. Sub-order ACICULINA.

Family COPPATIIDÆ.

Jaspis johnstoni (Schmidt) T., redescribed, p. 128; *J. johnstoni* (Schmidt), var. *incrustans* T., redescribed, p. 128; *J. dendyi* (Sollas) T., redescribed, pp. 129, 130: TOPSENT (50).

Spongosorites placenta T., redescribed: TOPSENT (50) pp. 130, 131.

Topsentia, definition of genus, p. 131; *T. glabra* (Topsent) B., redescribed, pp. 131, 132; *T. pachastrelloides* T., p. 133: TOPSENT (50).

Family STYLOCORDYLIDÆ.

Oxycordyla, n. g., definition of genus, p. 135; *O. pellita*, n. sp., described, pp. 135, 136: TOPSENT (50).

Family TETHYIDÆ.

Heteroxya, definition of genus, p. 133; *H. corticata* T., redescribed, pp. 133–135: TOPSENT (50).

Tethya lynceurium: MAR. BIOL. ASS. (34).—*T. neuberyi*: DENNANT & KITSON (8).

2. Sub-order CLAVULINA.

Family CLIONIDÆ.

Alectona millari C., redescribed: TOPSENT (50) pp. 111, 112.

Cliona labyrinthica H., redescribed, p. 105; *C. levispira* T., redescribed: TOPSENT (50) pp. 105–107.—*C. duvernoyi*, *C. nardoi*, *C. studeri*: SCHÜTZE (44).—*C. celata*: MAR. BIOL. ASS. (34).—†*C. cretacea*: ROWE (41) p. 293.—†*C. cretacea*, *C. glomerata*: JUKES-BROWNE & HILL (26) p. 505.—*C. pontica*, *C. typica*, *C. stationis*, *C. sp.?* (Czern): SOWINSKY (46) p. 289.—*Clione*, pearls originated by: HERDMAN (17).

Dotona pulchella C., redescribed: TOPSENT (50) pp. 108, 109.

Thoosa armata T., redescribed: TOPSENT (50) pp. 109–111.

Family POLYMASTIDÆ.

- Polymastia corticata* R. & D., redescribed: TOPSENT (50) pp. 119, 120.—*P. mamillaris*: MAR. BIOL. ASS. (34).—*P. meandria*, n. sp., diagnosed and described: WILSON (60) pp. 115–117.
Rhaphidorus, definition of genus, p. 120; *R. setosus* T., redescribed, pp. 120–122: TOPSENT (50).
Thecophora semisuberites: SCHEPOTIEFF (42) p. 3.
Tylexocladius, definition of genus, p. 122; *T. joubini* T., redescribed, pp. 122, 123: TOPSENT (50).

Family SPIRASTRELLIDÆ.

- Hymedesmia unistellata* T., n. var. *aspera*, redescribed, pp. 112, 113; *H. chondrilloides* T., redescribed, pp. 113, 114; *H. stelligera* C., redescribed, p. 114: TOPSENT (50).
Latrunculia biannulata T., redescribed, p. 115; *L. insignis* T., redescribed, pp. 115–117: TOPSENT (50).
Sceptrintus, definition of genus, p. 117; *S. richardi* T., redescribed, pp. 117–119: TOPSENT (50).

Family SUBERITIDÆ.

- Ficulia* [*Ficulina*?] *ficus* contains eggs of *Sepia*: GRUVEL (15).
Suberites laticeps, n. sp., described, pp. 124, 125; *S. gibbosiceps*, n. sp., described, pp. 125, 126: TOPSENT (50); *S. domuncula*: MAR. BIOL. ASS. (34).—*S. domuncula*, spongosterin obtained from: HENZE (16).—*S. prototypus*, *S. domuncula*: SOWINSKY (46) p. 289.
Rhizaxinella biseta, n. sp., described, pp. 126, 127; *R. uniseta*, n. sp., described, pp. 127, 128: TOPSENT (50).

(b) Order HALICHONDRINA.

Family HAPLOSCLERIDÆ.

- Amorphina caspia*, *A. protochalina*, *A. dubia*, *A. grossa*: SOWINSKY (46) pp. 173, 289.
Cacochalina digitata, *C. irregularis*: SOWINSKY (46) p. 289.
†*Ceraochalina reteplax tenuis*, n. var., described, *C. nuda* var. *oxyus* L., redescribed: THUM (49) pp. 15–17.
Chalinide, nutrition in: COTTE (6).
Chalina oculata: MAR. BIOL. ASS. (34).
†*Chalinissa elongata* L., redescribed, p. 13; *C. communis tenuis*, n. var., described, p. 14: THUM (49).
†*Chalinopora typica*, var. *tenuispina* L., redescribed: THUM (49) p. 11.
†*Cladochalina euplax* L., redescribed: THUM (49) pp. 11, 12.
Cladocroce spathiformis, n. sp., described: TOPSENT (50) pp. 242, 243.
†*Euchalina exigua*, var. *arborea* L., redescribed: THUM (49) pp. 20, 21.
Gelliodes bifacialis, n. sp., described, pp. 229, 230; *G.* sp., described, pp. 230, 231: TOPSENT (50).
Gellius angulatus (Bowerbank) R. and D., redescribed, p. 231; *G. fibulatus* (Schmidt) S., redescribed, p. 231; *G. flagellifer* R. and D., redescribed: TOPSENT (50) pp. 231, 232.—*G. perforatus*, n. sp., diagnosed and described, pp. 130, 134: WILSON (60).
Halichondria fibrosa (Fristedt) L., redescribed, p. 247; *H. leuconoides* T., redescribed, pp. 247–249: TOPSENT (50).—*H. panicea*: MAR. BIOL. ASS. (34).—*H. panicea*, bionomics: CUENOT (7).

- Lubomyrskia irregularis*: IAKHONTOFF (23) p. 3.
- Metschnikovia spinispiculum* (Carter) T., redescribed, p. 243; *M. filholi* T., redescribed, pp. 243, 244: TOPSENT (50).—*M. tuberculata*, *M. intermedia*: SOWINSKY (46) p. 173.
- Oceanapia* N., remarks on genus, pp. 127, 128; *O. bacillifera*, n. sp., diagnosed and described, pp. 128–130: WILSON (60).—*O. robusta* (Bowerbank) N., redescribed: TOPSENT (50) pp. 228, 229.
- Pachychalina acapulcensis*, n. sp., diagnosed and described: WILSON (60) pp. 124–127.
- Pellina semitubulosa*, *P. longispicula*, *P. foraminosa*: SOWINSKY (46) p. 289.
- Petrosia crassa* (Carter) L., redescribed: TOPSENT (50) pp. 240, 241.—*P. variabilis crassa*, n. subsp., diagnosed and described, pp. 118–121; *similis densissima*, n. subsp., diagnosed and described, pp. 121–124: WILSON (60).
- Phleodictyon fistulosum* B., redescribed, pp. 235, 236; *P. coriaceum*, n. sp., described, p. 237; *P. elongatum* (Topsent) L., redescribed, p. 238; *P. reticulatum*, n. sp., described, pp. 238, 239; *P. æreum*, n. sp., described, pp. 239, 240: TOPSENT (50).
- † *Phyllosiphonia pumila* L., redescribed: THUM (49) pp. 17, 18.
- Protoschmidtia grimmi*, *P. simplex*, *P. transitans*, *P. foraminosa*: SOWINSKY (46) pp. 173, 328.
- Renieridae*, nutrition in: COTTE (6).
- Reniera implexa* Sch., redescribed, p. 244; *R. foraminosa*, n. sp., described, p. 245; *R. spongiosa*, n. sp., described, p. 245; *R. utriculus*, n. sp., described, p. 246; *R.*, sp., described, p. 246: TOPSENT (50).—*R. simulans*, nutrition in: COTTE (6).—*R. flava*, *R. alba*, *R. aqueductus*, *R. informis*, *R. inflata*, *R. palmata*, *R. nigricans*: SOWINSKY (46) pp. 173, 289.
- Rhaphisia spissa* T., redescribed: TOPSENT (50) pp. 233–235.
- Schmidtia intermedia*: SOWINSKY (46) p. 289.
- † *Spinosella sororia*, var. *dilatata* D., redescribed, pp. 18, 19; *S. sororia*, var. *elongata* D., redescribed, pp. 19, 20: THUM (49).
- Spongillides* from Roumania: CHIRICA (2).
- Spongilla lacustris*, external characters described: GILLOT (13).—*S. fluviatilis*, spermatogenesis in: GORICH (14).—*S. microgemmata*: IAKHONTOFF (23) p. 3.—*S. lacustris*: RANGE (39) p. 238.
- Veluspa baicalensis*, *V. fusifera*: IAKHONTOFF (23) p. 3.

Family AXINELLIDÆ.

Description of family: TOPSENT (50) p. 137.

- † *Acanthoraphis intertextus*: JUKES-BROWNE & HILL (26) p. 505.
- Axinella vasonuda*, n. sp., described, pp. 140, 141; *A. vellerea*, n. sp., described, pp. 141, 142; *A. Australis* T., redescribed, pp. 139, 140: TOPSENT (50).—*A. rugosa*: SCHEPOTIEFF (42), p. 3.
- Auletta sycimularia* Sch., redescribed, pp. 143, 144; *A. sessilis*, n. sp., described, pp. 144, 145: TOPSENT (50).—*A. dendrophora*, n. sp., diagnosed and described: WILSON (60) pp. 158–161.
- Halicnemis constellata* T., redescribed, *azorica* var. n.: TOPSENT (50) p. 149.
- Higginsia thielei* T., redescribed: TOPSENT (50) p. 150, 151.
- Hymeniacidon sanguineum*, bionomics: CUENOT (7).—*H. sanguineum*, MAR. BIOL. ASS. (34).
- Phakellia robusta* B., redescribed, p. 143; *P. lamelligera*, n. sp., diagnosed and described, pp. 155–158: WILSON (50).—*P. ventilabrum*: SCHEPOTIEFF (42) p. 3.

- Sollasella hystrix* T., redescribed : TOPSENT (50) pp. 142, 143.
Syringella humilis T., described, p. 138 ; *S. fulcifera* T., redescribed, pp. 138, 139 : TOPSENT (50).
Tragosia infundibuliformis T. *polypoides* : MAR. BIOL. ASS. (34).

Family PÆCILOSCLERIDÆ.

- Acarus tortilis* T., redescribed : TOPSENT (50) p. 171.
Artemisina erecta, n. sp., described : TOPSENT (50) pp. 214, 215.
Biemma rosea (Fristedt) L., redescribed, pp. 226, 227 ; *B. grimaldii* T., redescribed, pp. 227, 228 : TOPSENT (50).
Bubaris vermiculata (Bowerbank) G., redescribed, pp. 145, 146 ; *B. mastophora* (Schmidt) T., redescribed, p. 146 ; *B. sosia*, n. sp., described, p. 147 : TOPSENT (50).
Cerbaris T., definition of genus, p. 160 ; *C. torquata* T., redescribed, pp. 160, 161 : TOPSENT (50).
Chondrocladia guiteli, n. sp., described : TOPSENT (50) pp. 207-209.
Dendoryx dentata, n. sp., described : TOPSENT (50) pp. 172, 173.
Desmacella inornata B., redescribed : TOPSENT (50) pp. 225, 226.
Desmacidon peltatus, n. sp., described, p. 204 ; *D. abyssi*, n. sp., described, pp. 204, 205 : TOPSENT (50).
Drigmatyle, n. g., defined, p. 195 ; *D. lictor*, n. sp., described, p. 195 : TOPSENT (50).
Esperia stepanowi, *E. irregularis*, *E. muscoides*, *E. contarenii*, *E. foraminosa*, *E. dubia* : SOWINSKY (46) p. 289.
Esperella fasciifibula, n. sp., described, p. 201 ; *E. tunicata* (Schmidt) V., redescribed, pp. 200, 201 : TOPSENT (50).—*E. ægagropila*, bionomics : CUENOT (7).
Esperiopsis villosa C., redescribed, pp. 211, 212 ; *E. decora*, n. sp., described, p. 212 ; *E. prædita* T., redescribed, p. 212 ; *E. glomeris*, n. sp., described, pp. 213, 214 : TOPSENT (50).
Forcepia C., definition of genus, p. 177 ; *F. bulbosa* (Carter) V., redescribed, pp. 179, 180 ; *F. imperfecta*, n. sp., described, p. 180 : TOPSENT (50).
Guitarra voluta, n. sp., described : TOPSENT (50) pp. 209-211.
Hamacantha johnsoni (Bowerbank) G., redescribed, pp. 215-217 ; *H. schmidtii* (Carter) L., redescribed, pp. 217, 218 ; *H. carteri*, n. sp., described, pp. 218-220 ; *H. lundbecki*, n. sp., described, pp. 220, 221 ; *H. impicans* L., n. var. *azorica*, redescribed, pp. 221, 222 ; *H. integra*, n. sp., described, pp. 222, 223 ; *H. claviscepta* T., redescribed, pp. 223, 224 : TOPSENT (50).
Heterocluthria hallezi, n. g., described : TOPSENT (50).
Hymeraphia B., definition of genus, p. 161 ; *H. clavata* B., redescribed, p. 161 ; *H. viridis* T., redescribed, p. 162 ; *H. spinispinosa*, n. sp., described, p. 162 ; *H. affinis* T., redescribed, p. 163 ; *H. pilosella*, n. sp., described, pp. 163, 164 ; *H. hispidula*, n. sp., described, pp. 164, 165 ; *H. mucronata*, n. sp., described, pp. 165, 166 ; *H. peachi* (Bowerbank) T., redescribed, p. 166 ; *H. mutabilis*, n. sp., described, pp. 167, 168 : TOPSENT (50).
Hymerhabdia T., definition of genus, p. 159 ; *H. oxytrunca*, n. sp., described, pp. 159, 160 : TOPSENT (50).
Hymetrochota, n. g., definition of genus, p. 168 ; *H. rotula*, n. sp., described, p. 168 : TOPSENT (50).
Iophon lamella, n. sp., diagnosed and described, pp. 146-149 ; *I. lamella indivisus*, n. subsp., diagnosed and described, pp. 149-151 ; *I. indentatus*, n. sp., diagnosed and described, pp. 151-154 ; *I. chelififer ostiarmagna*, n. subsp., diagnosis and description, pp. 143-146 : WILSON (60).

- Joyeuxia* T., diagnosis of genus, p. 205; *J. viridis* T., redescribed, p. 206; *J. tubulosa*, **n. sp.**, described, pp. 206, 207: TOPSENT (50).
- Leptolabis*, **n. g.**, definition of genus, pp. 181, 182; *L. forcipula*, **n. sp.**, described, p. 182; *L. forcipula*, **n. var. brunnea**, described, p. 183; *L. arcuata*, **n. sp.**, described, pp. 183, 184; *L. luciensis* T., redescribed, pp. 184, 185: TOPSENT (50).—*L. luciensis*: MAR. BIOL. ASS. (34).
- Leptosia* T., definition of genus, p. 185; *L. occulta* (Bowerbank) T., redescribed, pp. 186, 187; *L. pecqueryi* T., redescribed, pp. 187, 188; *L. kœhleri* T., redescribed, p. 189; *L. schmidtii* T., redescribed, pp. 190, 191; *L. baculifera* T., redescribed, p. 191; *L. biscutella*, **n. sp.**, described, pp. 191, 192; *L. umbellifera*, **n. sp.**, described, p. 192; *L. raphigena*, **n. sp.**, described, pp. 192, 193; *L. obtusata*, **n. sp.**, described, p. 193; *L. acerata*, **n. sp.**, described, pp. 193, 194: TOPSENT (50).
- Leptosastræa*, **n. g.**, definition of genus, p. 194; *L. constellata*, **n. sp.**, described, pp. 194, 195: TOPSENT (50).
- Lissodendoryx simplex*, **n. sp.**, described, p. 173; *L. fertilior*, **n. sp.**, described, pp. 173, 174: TOPSENT (50).
- Melonanchora elliptica* C., redescribed: TOPSENT (50) p. 177.
- Microciona atrasanguineum*, bionomics: CUENOT (7).
- Myxilla paupertas* (Bowerbank) V., redescribed with list of synonyms, pp. 168, 169; *M. mariana* R. & D., **n. var. polysigma**, described, pp. 169, 170: TOPSENT (50).
- Phlyctenopora*, **n. g.**, definition of genus, pp. 198, 199; *P. bitorquis*, **n. sp.**, described, pp. 199, 200: TOPSENT (50).
- Plocamia ambigua* (Bowerbank) T., list of synonyms and descriptions, pp. 154, 155; *P. coriacea* (Bowerbank), **var. elegans** R. & D., redescribed, p. 155: TOPSENT (50).
- Plocamiopsis*, **n. g.**, definition of genus, p. 155; *P. signata*, **n. sp.**, described, pp. 155–157: TOPSENT (50).
- Protoesperia simplex*, *P. lobimana*: SOWINSKY (46) p. 328.
- Rhabderemia* T., description of genus and species, pp. 151, 152; *R. minutula* (Carter) T., redescribed, pp. 152, 153: TOPSENT (50).
- Rhabdoploca*, **n. g.**, definition of genus, pp. 157, 158; *R. curvispiculifera* (Carter), redescribed, pp. 158, 159: TOPSENT (50).
- Rhaphidotheca* S. K., definition of genus, p. 202; *R. loricata* T., redescribed, pp. 202, 203: TOPSENT (50).
- Stelodoryx*, **n. g.**, definition of genus, p. 174; *S. procera*, **n. sp.**, described, pp. 174–176: TOPSENT (50).
- Stylostichon repens*, **n. sp.**, described: TOPSENT (50) p. 170.
- Stylotella jullieni* T., redescribed: TOPSENT (50) p. 225.
- Suberotelites demonstrans* T., redescribed: TOPSENT (50) p. 157.
- Tedania suctorica* Sch., redescribed, p. 176; *T. commixta* R. & D., redescribed, pp. 176, 177: TOPSENT (50).
- Trachyforcepia*, **n. g.**, definition of genus, p. 181; *T. grænlandica* (F.), redescribed, p. 181: TOPSENT (50).
- Tylodesma* T., remarks on genus, pp. 135, 136; *T. alba*, **n. sp.**, diagnosed and described, pp. 136–138; *T. vestibularis*, **n. sp.**, diagnosed and described, pp. 139–142: WILSON (50).
- Yvesia pertusa* T., redescribed, p. 196; *Y. alecto* T., redescribed, pp. 196–198; *Y. carnosæ*, **n. sp.**, described, p. 198: TOPSENT (50).

(iii) KERATOSA.

(a) DICTYOCERATINA.

Family SPONGIDÆ.

- Aplysinopsis massa*, **n. sp.**, described; *A. tuberosa*, **n. sp.**, described: SZYMAŃSKI (47).

Cacospongia, remarks re genus : SZYMAŃSKI (48).

Hircinia variabilis, n. var. *fistulata*, remarks on : SZYMAŃSKI (47, 48) ;

H. vestibulata, n. sp., described : SZYMAŃSKI (48).

†*Phyllospongia lumbricaria*, *P. acuminata*, *P. elongata*, *P. subarticulata*,
P. latifrons, *P. varius* : WALTHER (57).

†*Spongites saxonicus* : JAHN (25).

Family SPONGELIDÆ.

Spongelia ramosa, nutrition in : COTTE (6).—*S. elegans*, *S. incrustans*, *S. palescens* : SOWINSKY (46) p. 289.

Spongillides from Roumania : CHIRICA (2).

(b) DENDROCERATINA.

Family DARWINELLIDÆ.

Darwinella simplex T., redescribed : TOPSENT (50) pp. 55, 56.

Family APLYSILLIDÆ.

†*Dendrospongia* vide *Craticularia* : JUKES-BROWNE & HILL (26) p. 506.

(iv) MYXOSPONGIDA.

Family HALISARCIDÆ.

Halisarca dujardini, *H. lobularis* : SOWINSKY (46) p. 289.—*H. dujardini* :
MAR. BIOL. ASS. (34).

E. OCTACTINELLIDA.

Vacant.

F. HETERACTINELLIDA.

Vacant.

G. INCERTÆ SEDIS.

†*Brachiolites*, vide *Craticularia* : JUKES-BROWNE & HILL (26) p. 505.

†*Cupulochonia cupuliformis*, *C. sp.*, *C. subaudiana* : BAUMBERGER (1)
p. 21.

†*Hippalimeudon* sp. : BAUMBERGER (1) p. 21.

†*Monotheles stellata* : BAUMBERGER (1) p. 21.

Pellinula (?) *cribosa*, *P. schmidtii* : SOWINSKY (46) p. 328.

†*Scyphia ræmeri*, *S. caminensis*, *S. sp.* : ECK (10).—*S. pedunculata* : JAHN
(25).—*S. pedunculata* : JUKES-BROWNE & HILL (26) p. 508. (*Scyphia*
is a Dictyonine.)

†*Strephochetus*, n. g., described : SEELY (45).

†*Satratus brainerdi*, *S. ocellatus*, *S. prunus*, n. spp., described : SEELY
(45).

†*Talpina dendrina*, *T. ramosa*, *T. solitaria* : JUKES-BROWNE & HILL (26)
p. 508.

Tedaniella cylindrigera : SOWINSKY (46) p. 328.

XVIII. PROTOZOA.

BY

H. M. Woodcock, D.Sc. (Lond.).

CONTENTS.

	Page
INTRODUCTION	3
I. TITLES.	6
II. BIOLOGY	
A. Morphology	28
1. General anatomy	28
2. Minute structure of cell-organs, special points	29
B. Physiology	30
1. Nutrition, excretion, etc.	30
2. Locomotion	30
3. Response to stimuli	31
C. Bionomics	31
1. Plankton	31
2. Parasitism: effects on host; relation to disease	32
D. Reproduction	34
1. Asexual	35
2. Sexual	35
3. Nuclear division; directive-centres, etc.	35
E. Development; life-cycle.	36
F. Group relationships; classificatory changes	37
G. Miscellaneous	37
1. Cultivation and infection	37
2. Technique	38
3. Bibliography, etc.	38
III. DISTRIBUTION.	
A. Geographical	38
B. Geological	39
C. Parasitic (including commensalism)	40

IV. SYSTEMATIC.

A. Protozoa in general	42
B. Gymnomyxa	42
1. Mycetozoa	42
(a) Protomyxidea	42
(b) Mycetozoida	42
2. Rhizopoda	42
(a) Lobosa	42
(b) Foraminifera	43
3. Heliozoa	50
(a) Aphrothoraca	50
(b) Chlamydophora	50
(c) Chalarothoraca	50
(d) Desmothoraca	50
4. Radiolaria	50
(a) Peripylaria	50
(b) Acantharia	51
(c) Monopylaria	52
(d) Tripylaria	53
c. Sporozoa	54
1. Telosporidia	54
(a) Gregarinidea	54
(b) Coccidiidea	55
(c) Hæmosporidia	55
2. Neosporidia	56
(a) Myxosporidia	56
(b) Actinomyxidia	56
(c) Sarcosporidia	56
Sporozoa incertæ sedis	56
d. Mastigophora	57
1. Flagellata (Euflagellata)	57
(a) Lissoflagellata	57
(b) Choanoflagellata (vacant)	
2. Silicoflagellata (vacant)	
3. Dinoflagellata	58
(a) Adinida (vacant)	
(b) Dinifera	58
4. Rhynchoflagellata	59
E. Ciliophora	59
1. Ciliata	59
(a) Holotricha	59
(b) Heterotricha	60
(c) Hypotricha	60
(d) Peritricha	60
2. Suctoria	60

INTRODUCTION.

THE number of Titles in the *Protozoa* Record for 1904 shows some falling off compared with that for the previous year, being 371 instead of 433. The Recorder attributes this diminution partly to the fact that the references were collected (by the Searcher) much earlier in the year than has hitherto been the case. It is notorious that many periodicals are not received by our Libraries until several months after publication; hence it is quite likely that there will be a certain influx into next year's Record of 1904 papers received too late for insertion in the present one. Nevertheless, allowance being made for the above circumstance, there seems little doubt that fewer, rather than more, Protozoan memoirs appeared in 1904. From many journals in which there were several papers in 1903 few or none have to be recorded this year. To give one example only: instead of over a dozen from the *Forschber. Plon*, two or three at most have been culled.

If, however, the present Record exhibits some loss in respect of the quantity of material, this is certainly not true of the quality. As regards the Flagellates, at any rate, the year 1904 must undoubtedly rank as one of the most important in the history of the group up till now. And not of this class alone has one's entire conception to be fundamentally modified as the result of last year's research! Rarely, if ever, the Recorder imagines, has the Protozoa division of the Zoological Record contained a memoir of such far-reaching—indeed, almost inestimable—significance as is herein included. By general consensus of opinion the stupendous revelation of SCHAUDINN (301) “inaugurates a new era in the history of the Sporozoa and Flagellates.”

For the benefit of any who are not already cognizant of this epoch-marking investigation, the main facts elucidated may be here stated. The author describes the complete life-cycle of two distinct organisms, one a Trypanosome, the other possessing the typical characters of a *Spirochæta*, both parasitic in the blood of the Little Owl. The latter parasite, far from being a Bacterium, is, in all essentials, a Trypanosome, and Schaudinn finds that the same is true for other so-called *Spirochæta*. Both these Flagellates have an alternation of hosts and of generations, the “carrier,” a gnat, being a true definitive host in which—and only in which—sexual conjugation takes place. Moreover, for part of the time spent in the blood of the bird, the Flagellate is intracellular, acquires a gregariniform condition, and becomes, in the case of the Trypanosome, what has hitherto been known as a species of *Halteridium*, and, in the case of the “*Spirochæta*,” what has previously been described as a “*Hæmamaeba*” or “*Leucocytozoon*.” In other words, two characteristic Hæmosporidian parasites are, respectively, only a transient phase in the life-history of a particular Hæmoflagellate!

So revolutionizing are these discoveries that, in view of the difficulty of the subject and the impossibility of following one and the same individual through its various phases, one might almost feel inclined to doubt the correctness of Schaudinn's interpretation of his observations; were it not for the fact that this author has already contributed such valuable additions to our knowledge of the complicated life-history of parasitic Protozoa. It is, therefore, casting no reflection on one who may be fittingly termed a “prince of protistologists,” to say that the corroborative evidence—in more than one direction—which is already forthcoming, is highly welcome (vide, for instance, MESNIL [234], BILLET [20], LÉGER [184 & 185], BRUMPT [48], and ROGERS [286]). In short, the whole tendency of research at present points to a very close connection between the Hæmosporidia and parasitic Flagellates.

Scarcely less important is the work of PROWAZEK (277 & 278) and of LÉGER. The former minutely describes the complicated life-history of several other parasitic Flagellates, and his memoirs are of great value to students of the group. Thanks to these contributions and that of Schaudinn, the pronounced scepticism of Klebs, Senn, and others with regard to the occurrence of a sexual process in this class, which has hitherto considerably hampered real progress, is now completely refuted, and the views of Kent and of Dallinger and Drysdale are at length vindicated.

To LÉGER are due practically all the data we possess to aid us in arriving at a correct idea of the phylogeny of the Hamoflagellates. From his most fortunate redescription (180 & 181) of *Trypanoplasma borreli*, on the one hand, and from the instructive series of Herpetomonadine forms which he reveals (186 & 187) on the other hand, it seems abundantly clear that a heterophyletic origin must be assigned to the parasites included in the designation of "Trypanosomes."

There yet remain one or two researches on parasitic Flagellates which ought not to be passed over without mention. The Recorder refers to the interesting and particularly well-illustrated accounts by FOA (110) and GRASSI & FOA (126) of the process of division in members of the curious group of the *Trichonymphidae*.

Although memoirs dealing with the Flagellates occupy by far the most important place in the section for Morphology and Development, there are, nevertheless, certain others to which allusion must be made. PENARD (260) has had an opportunity of examining *Chlamydomyxa*, and helps to clear up several disputed points, e.g., the nature of the "travelling corpuscles." Other Gymnomyxan papers are those by CALKINS (57), who produces evidence in favour of a sexual cycle in *Amœba proteus* and strongly inclines to the belief that the sexual phases are represented by "*Pelomyxa*"-forms, and ZÜLZER (369), who contributes a full account of *Diffugia urceolata*. In (113) FOWLER supplements his work on the Tripylarian *Planktonetta* with a note on the anatomy of *Gazelletta*.

Turning to the Sporozoa, a useful comparative description of the growth and development of Gregarines up to the adult trophozoite-phase is furnished by LÜHE (209); and LÉGER & DUBOSCQ (192) bring forward additional original observations dealing with this subject. A most interesting description of the formation of gametes and conjugation in *Stylorhynchus* is given by LÉGER (188). An important Myxosporidian paper is that of STEMPPELL (336) on the development of the cyst and spores in *Glugea anomala*. WOODCOCK (361) has studied "diffuse infiltration" in *G. stephani*, and offers an explanation of this condition, as there seen. Welcome additions to our knowledge of the Actinomyxidina are contributed by CAULLERY & MESNIL (64 & 65) and LÉGER (182 & 183). Finally, the occurrence of a remarkable parasite is noted by WOODCOCK (362), who has, unfortunately, been unable so far to learn much concerning its life-history and affinities.

Apart from the conscientious description of conjugation in *Paramœcium* by HAMBURGER (134), research on the Ciliates has been chiefly with respect to their minute structure. LÉGER—to whom Protozoology, this year, owes much indeed!—and DUBOSCQ (193-195), after a consideration of certain parasitic *Opalinidae*, come to the conclusion that the *Astomata* do not represent a natural group. The numerous papers of FAURÉ have proved a veritable thorn in the flesh to the Recorder. No less than five (95, 98-101), are taken up in describing the contractile fixative apparatus of the Vorticellids, and the labour required to piece them together and obtain a definite idea of the whole is by no means slight. It is the more pity that the author did not combine these scrappy fragments into a finished memoir, since the conclusion to which he comes with regard to

the origin of the Discotricha distinctly merits attention. MITROPHANOW (239, 241), minutely describes the formation and structure of the trichocysts of *Paramœcium*, and thinks that they subserve an excretory purpose.

Protozoan Physiology has certainly been enriched by CALKIN'S studies on *Paramœcium*. At the close of a remarkably painstaking series of researches this writer comes to the conclusion (56) that, in the long run, conjugation is essential for the continuance of the race. From JENNING'S work (152) it would appear that, between living protoplasm and the most artful of physical imitations, there lies a gulf, to bridge which will require much more than, for instance, Mr Burke's "radiobes."

To mention *Actinosphaerium* is to think of R. HERTWIG, and his investigations on the relation between cell-metabolism and functional degeneration, which have been largely worked out on this form, are fully recounted in (138). Too much importance cannot be attached, in the Recorder's opinion, to this author's highly suggestive ideas concerning the real nature of malignant tumours, in which the cells lose their "organotypic" growth and activity, and retain only that of a "cytotypic" character.

The rôle played by Protozoa in medical parasitology still gains in importance. The etiology of various Oriental maladies, such as Kala-Azar, tropical splenomegaly, Delhi sore, and bouton d'Orient, is now explained by the discovery of parasites closely allied to *Piroplasma* (vide CHRISTOPHERS (73-75), DONOVAN (83), LAVERAN & MESNIL (173), LEISHMAN (196), MESNIL, NICOLLE & REMLINGER (235), WRIGHT (367), and others). Moreover, it appears not unlikely that the once dreadful scourge of small-pox is also to be ascribed to the ravages of a minute Sporozoan parasite. CALKINS (58) gives a detailed account of the bodies known as "*Cytoryctes variolæ*," considers them as phases of a distinct organism allied to *Lymphosporidium*, and constructs a complex life-history for the parasite. This much, at any rate, may be said. In view of the fact that Calkins is a most competent protozoologist, far more weight must be attached to his research than is necessary in many cases where the Protozoan nature of cell-inclusions is confidently asserted!

For various works on Geographical Distribution the reader is referred to the papers by CASH, GILSON, GOUGH, HÄCKER, HUTTON, JENSEN, MILLETT, MONTI, NOBRE, PENARD, SIDEBOTTOM & WORTH, and on Geological Distribution to those by BAGG, BRÜCKMANN, CHAPMAN, FORNASINI, HOLLAND, JUKES-BROWNE, LEARDI, MARTELLI, MARTIN, PREVER, READE, SCHLUMBERGER, SCHUBERT, SILVESTRI and others.

The rich Gymnomyxan fauna of the Lake of Geneva has supplied PENARD with material for his paper (259) on some new Rhizopods, and also for his monographic work (262) on fresh-water Heliozoa. That there is no lack of interesting forms nearer home is shown by CASH (60). Coming to the Foraminifera, an important memoir on *Lepidocyclina* is contributed by LEMOINE & DOUVILLÉ (201). The *Orbitoidæ* have been well looked after by PREVER (272 & 274), PREVER & RZEHAČ (276) and SCHLUMBERGER (305), attention having been paid chiefly to the genus *Orthophragmina*. PREVER also continues (in 275) his study on the forms included in the term "*Nummulites*." MILLETT (236 & 237) at length concludes his description of Recent Malayan Foraminifera. There are several other Systematic papers on this order which should not be neglected, e.g., those of BRÜCKMANN (46), CHAPMAN (69-71), CHECCHIA-RISPOLI (72), and SCHLUMBERGER & CHOFFAT (306).

As a result of the German plankton and deep-sea expeditions, rather more Radiolarian memoirs than of late have to be chronicled. BORGERT (28), HÄCKER (132), and IMMERMANN (148) deal with the Tripylaria, the last-named contributing a useful account of the *Aulacanthidæ*. POPOFSKY (270) has produced a bulky work on the *Acanthometrea*. It may be very

important, but the Recorder confesses that the chief point about it which struck him is the manifest desire of the author to tack on his name (in the abbreviated form of "Pop.") to every nomenclaturic change or addition suggested. Nowhere in his description is n. g., n. sp., or the like to be found. Fortunately for the Recorder the Acantharia do not seem to have been previously honoured by Popofsky's attention, so he has felt justified in replacing "Pop." by the correct designation, so far as he was able to ascertain it from the context.

Many new Hæmogregarines have been observed, chiefly by BILLET (21-24), CASTELLANI & WILLEY (63), NICOLLE (247-249), SERGENT (314), and SOULIÉ (327); also, usually associated with new Trypanosomes, by BRUMPT & LEBAILLY (50) and LEBAILLY (179). Lastly, a full account of Trypanosomes known up to the time of writing is given by LAVERAN & MESNIL (176). This work, compiled as it is very largely from original papers by the authors, affords a good idea of the amount of research bestowed by them upon these all-important parasites.

Besides the works on Ciliates above referred to, mention may be made of FAURÉ's paper (105) on new *Operculariæ*. The systematic list of the Infusoria is, however, much shorter than last year, while the sole entry under Tentaculifera is that of *Astrophrya*, a new genus described by AVERINTZEV (6).

I. TITLES*.

1. [ANON.] Section "Protozoa" in Intern. Cat. Scient. Lit. 1904 (ii), pp. 415-433. [See II. a. 3.]
2. —. The Sporozoa in relation to disease in man and animals. *Lancet* 1904, i, pp. 736, 889, 950, 1009, 1296, 1371, 1443.
Abstracts of series of Lectures delivered by Prof. Minchin at University College, London.
3. —. Protozoaires. In Suppl. to Natural. Canad. xxxi (n.s. 11), pp. 220-222.
Short popular account.
4. —. Ueber Trypanosomen. *Zeitschr. ang. Mikr.* x, pp 85-95, 114-120. [See II. a. 1.]
General review of present knowledge.
5. ARKHANDHELSKIĬ, A. D. Paleotzenoviya otlozhenia, saratovskagho povolzh'ya, i ikh'fauna. *Mater. Gheol. Rossii* xxii, i, 207 pp., 11 pls. (Resumé in French, pp. 201-203.)
6. AVERINTZEV, S. *Astrophrya arenaria*, nov. gen., nov. spec. *Zool. Anz.* xxvii, pp. 425 & 426, 1 text-fig.
Abstract in *J. R. Micr. Soc.* 1904, p. 313.
7. —. Ueber die Theilung bei *Amæba proteus* Pall. sp. (Vorläufige Mittheilung). *T. c.* pp. 399 & 400.
Abstract in *Bull. Inst. Pasteur* ii, p. 379.
8. —. Protistodoghicheskaya zamyetki. *Trudui St. Peterb. Obshch.* xxxiii, iv, pp. 21-41. [In Russian.]
Concerns Foraminifera; evidently treats of the structure of their shells.

* An asterisk prefixed to a quotation indicates that the recorder has not seen the Journal or Work referred to.

9. BAGG, R. M. Foraminifera. Maryland geol. Survey (Miocene). Baltimore, 1904, pp. 460-483, pls. 131-133.
10. BARRATT, J. O. W. Die Reaktion des Protoplasmas in ihrem Verhältniss zur Chemotaxis. Zeitschr. allg. Physiol. iv, pp. 87-104, 1 pl.
11. ——. Die Wirkung von Säuren und Basen auf lebende Paramäcien. T. c. pp. 438-484, 12 tables.
12. *BARROIS, C. Sur les Foraminifères des phanites carbonifères du Boulonnais. Ann. Soc. geol. Nord xxxi (1902), pp. 40-42.
13. BASTIAN, C. H. On the Origin of Flagellate Monads and of Fungus-germs from minute masses of Zoogloea. Nature lxxi, pp. 77-81, 12 text-figg.
14. ——. Studies in Heterogenesis. London (Williams & Norgate), 1903, pp. (iv + 354 + xxxvii), 19 pls. [Among other things, on the transformation of certain Rotifers into Infusoria!] Review in Nature lxxix, p. 385.
15. DE BEAUCHAMP, P. Sur la fixation à l'état d'extension des animalcules contractiles et spécialement des Vorticelles. Bull. Soc. zool. France xxix, pp. 26 & 27. [See II. G. 2.]
16. BENTLEY, C. A. Notes upon Kala-Azar and the new parasite. Brit. Med. J. 1904, ii, pp. 653-655.
17. *———. A short note on the parasite of Kala-Azar. Indian Med. Gaz. xxxix, pp. 81 & 82, 1 fig.
18. BERESTNEFF, N. Ueber das "*Leucocytozoon*" *danilewskyi*. Arch. Protistenk. iii, pp. 376-386, pl. 15. Abstract in Bull. Inst. Pasteur ii, p. 599.
19. *BEZANÇON, F. & LABBÉ, M. Traité d'hématologie. Paris (Steinheil), 1904, 8vo, pp. (xviii + 965), 9 pls., 125 text-figg.
20. BILLET, A. Culture d'un Trypanosome de la grenouille chez une Hirudinée; relation ontogénique possible de ce Trypanosome avec une Hémogregarine. C.R. Ac. Sci. cxxxix, pp. 574-576. Abstract in Bull. Inst. Pasteur ii, p. 989.
21. ——. À propos de l'Hémogregarine du crapaud de l'Afrique du Nord. C.R. Soc. Biol. lvi, pp. 482-484, 8 text-figg.
22. ——. Sur une Hémogregarine karyolysante de la couleuvre vipérine. T. c. pp. 484 & 485, 6 text-figg.
23. ——. À propos de l'Hémogregarine de l'émyde lépreuse (*Emys leprosa* Schw.) de l'Afrique du Nord. T. c. pp. 601-603, 8 text-figg.
24. ——. Sur l'Hémogregarine du lézard ocellé d'Algérie. T. c. pp. 741-743, 10 text-figg.
25. ——. Sur les corpuscules paranucléaires des hématies de la tarente d'Algérie. Op. cit. lvii, pp. 160 & 161. [See II. G. 2.]
26. ——. Sur le *Trypanosoma inopinatum* de la grenouille verte d'Algérie et sa relation possible avec les *Drepanidium*. T. c. pp. 161-164, 16 text-figg. Abstract in Bull. Inst. Pasteur ii, p. 724.
27. BLANCHARD, R. Sur un travail de M. le Dr Brumpt intitulé "Quelques faits relatifs à la transmission de la maladie du sommeil par les mouches tsétsé." Arch. parasit. viii, pp. 572-589.

28. BORGERT, A. Mittheilungen über die Tripyleen-Ausbeute der Plankton-Expedition. II. Die Tripyleenarten aus den Schliessnetzfangen. Zool. Jahrb. Syst. xix, pp. 733-760, 18 text-figg.
29. BOSQ, F. J. Note préliminaire à l'étude des parasites du cancer. C.R. Soc. Biol. lvi, pp. 337-339.
30. —. Recherches sur le parasitisme du cancer. I. Formes parasitaires non enkystées. T. c. pp. 470-472, 26 text-figg.
31. —. [Same title.] II. Modes de division nucléaire des parasites. T. c. pp. 472 & 473. [See preceding for figg.]
32. —. Les maladies bryocytiques (maladies à Protozoaires). I. Mémoire. Introduction générale à l'étude des maladies bryocytiques. Centrbl. Bakter. (1) xxxvi, Orig. pp. 487-493.
33. —. [Same title.] II. Mémoire. La maladie vaccinale et son parasite (*Plasmodium vaccinae*). T. c. pp. 630-645, and op. cit. xxxvii, pp. 35-48, 5 pls., pp. 195-213, 2 pls. [See II. c. 2.]
34. —. Recherches sur la structure et l'appareil nucléaire des Trypanosomes (à propos d'un Trypanosome observé chez le lapin). Arch. Protistenk. v, pp. 40-77, 3 (68) text-figg.
35. BOUGON, —. Famille des Cryptomonadinées (suite). Microgr. prep. xii, pp. 27-31, 86-89, 114-117.
General account.
36. —. Les Infusoires ciliés (suite). T. c. pp. 61-67, 162-167.
General account.
37. —. Les Infusoires tentaculifères. T. c. pp. 226-229, 261-270, pls. 15, 29.
General account.
38. BOWHILL, T. & LE DOUX, C. A. A contribution to the study of *Piroplasmosis canis*—malignant jaundice of the dog (Hutcheon). J. Hygiene iv, pp. 217 & 218, pl. 11.
BOYCE, R. [See ROSS & BOYCE (290) & STEPHENS & BOYCE (339).]
39. BRANDES, G. Die elastische Faser des Vorticellenstiels. Zeitschr. Naturw. lxxvi, pp. 368 & 369.
40. BRASIL, L. Sur une Coccidie nouvelle, parasite d'un Cirratulien. C.R. Ac. Sci. cxxxix, pp. 645 & 646.
41. —. Contribution à la connaissance de l'appareil digestif des Annélides polychètes. L'épithélium intestinal de la Pectinaire. Arch. Zool. exp. (4) ii, pp. 91-255, pls. 4-8, 24 text-figg. (Sporozoa, pp. 213-235, pl. 8.)
Abstract in Bull. Inst. Pasteur ii, p. 573.
42. BREHM, V. & ZEDERBAUER, E. Beiträge zur Planktonuntersuchung alpiner Seen. Theil. II. Verh. Ges. Wien liv, pp. 635-643, 5 text-figg.
43. BRODEN, A. Ueber einige Fälle von Infektion mit Trypanosomen am Congo, an Menschen und Thieren beobachtet. Zeitschr. ang. Mikr. x, pp. 35-37.
44. —. Trypanosomiasis et maladies du sommeil. Bull. Soc. Etudes Colon. xi, pp. 701-713, 2 pls. and 1 text-fig.
45. BROWNE, E. T. On the Marine Fauna of the Isles of Scilly. Part I. The pelagic Fauna. J. Inst. Cornwall xvi, i, pp. 120-127.
[See II. c. 1.]

46. BRÜCKMANN, R. Die Foraminiferen des litanisch-kurischen Jura. Schr. Ges. Königsb. xlv, pp. 1-36, pls. 1-4.
47. BRUMPT, E. La maladie désignée sous le nom d'Aïno par les Somalis de l'Ogaden est une trypanosomose probablement identique au Nagana de l'Afrique orientale. C.R. Soc. Biol. lvi, pp. 673-675.
Abstract in Centrbl. Bakter. (1) xxxv, Ref. p. 406.
48. —. Contribution à l'étude de l'évolution des Hémogregarines et des Trypanosomes. Op. cit. lvii, pp. 165-167.
Abstract in Bull. Inst. Pasteur ii, p. 724.
49. —. À propos de la *Glossina decorsei* Brumpt. T. c. pp. 430-432.
[See II. G. 1.]
50. — & LEBAILLY, C. Description de quelques nouvelles espèces de Trypanosomes et d'Hémogregarines parasites des Téléostéens marins. C.R. Ac. Sci. cxxxix, pp. 613-615.
Abstract in Bull. Inst. Pasteur ii, p. 990.
51. — & WURTZ, —. Maladie du sommeil expérimentale chez les souris, rats, cobayes, lapins, marmottes et hérissons. C.R. Soc. Biol. lvi, pp. 567-569.
Abstract in Centrbl. Bakter. (1) xxxv, Ref. p. 406.
52. — & —. Maladie du sommeil expérimentale chez les singes d'Asie et d'Afrique. T. c. pp. 569-571.
53. — & —. Maladie du sommeil expérimentale chez les singes d'Amerique, les makis de Madagascar, le chien et le porc. T. c. pp. 571-573.
54. BYLOFF, K. Ein Beitrag zur Kenntniss der Rattentrypanosomen. SB. Ak. Wien cxiii, pl. 111-138, 2 pls.
55. CALDERON, S. Nota sobre el terreno nummulítico del Guadalquivir. Bol. Soc. espan. iv, pp. 56-59.
56. CALKINS, G. N. Studies on the Life-history of Protozoa. iv. Death of the A Series. Conclusions. J. exp. Zool. i, pp. 423-461, 3 pls., 3 text-figg.
[See II. D. 2.]
57. —. Evidences of a sexual cycle in the Life-history of *Amœba proteus*. Arch. Protistenk. v, pp. 1-16, 3 pls., 1 text-fig.
58. —. The Life-history of *Cytoryctes variolæ* Guarnieri. Stud. Path. Etiol. Variola 1904 (Office J. Med. Res. Boston), pp. 136-172, pls. 16-20, 5 text-figg.
59. —. Protozoa and Disease. The Century Magazine lxvii, pp. 931-940, 8 text-figg.
Popular account.
60. CASH, J. On some new and little-known British freshwater Rhizopoda. J. Linn. Soc. xxix, pp. 218-225, pl. 26.
61. CASTELLANI, A. "*Leishmania donovani*" in Ceylon. Brit. Med. J. 1904, ii, pp. 656 & 657, 2 figg.
62. —. Some researches on the Etiology of dysentery in Ceylon. J. Hygiene iv, pp. 495-510, 1 text-fig.
63. — & WILLEY, A. Observations on the Hæmatozoa of Vertebrates in Ceylon. (A preliminary note.) Spolia Zeylan. ii, pp. 78-92, 1 pl.
Abstract in Bull. Inst. Pasteur ii, p. 770.

64. CAULLERY, M. & MESNIL, F. Sur un type nouveau (*Sphaeractinomyxon stolci* n. g., n. sp.) d'Actinomyxidies, et son développement. C.R. Soc. Biol. lvi, pp. 408-410.
65. — & —. Sur les affinités des Actinomyxidies. T. c. pp. 410-412.
66. — & —. Revue annuelle de Zoologie. Rev. gen. Sci. xv, pp. 594-610. [Able review of important contributions to Protozoan knowledge during 1904, pp. 601-604.]
67. *CHAINSKEY, A. Ueber Veränderungen im Bau des Kernes bei *Paramœcium*. Arb. Lab. Warsaw xxx, 1903. [In Russian.]
Abstract in Zool. Zentrbl. xi, p. 509.
CHALMERS, A. J. [See WILLEY, CHALMERS & PHILIP (359).]
68. CHAPMAN, F. On the mineralogical structure of the porcellaneous Foraminifera. Ann. Nat. Hist. (7) xiv, p. 310.
69. —. Foraminifera and Ostracoda from the Cretaceous of East Pondoland, South Africa. Ann. S. African Mus. iv (v), pp. 221-237, pl. 29.
70. —. On some Foraminifera and Ostracoda from Jurassic (Lower Oolite) Strata, near Geraldton, Western Australia. P. Soc. Victoria xvi (n. s.), pp. 185-206, pls. 22 & 23.
71. —. On some Cainozoic Foraminifera from Brown's Creek, Otway Coast. Rec. geol. Surv. Victoria i, pp. 227-230, pl. 22.
72. CHECCHIA-RISPOLI, G. I Foraminiferi eocenici del gruppo del M. Judica e dei dintorni di Catenanuova in provincia di Catania. Boll. Soc. geol. Ital. xxiii, pp. 25-66, pl. 2.
CHOFFAT, P. [See SCHLUMBERGER & CHOFFAT (306).]
CHOWNING, W. M. [See WILSON & CHOWNING (360).]
73. CHRISTOPHERS, S. R. Tropical splenomegaly and oriental sore. Brit. Med. J. 1904, ii, pp. 655 & 656.
74. —. On a parasite found in persons suffering from enlargement of the spleen in India. Preliminary Report. Sci. Mem. India 1904, viii, 17 pp., 2 pls.
Abstract in Bull. Inst. Pasteur ii, p. 438.
75. —. [Same title.] Second Report. Op. cit. 1904, ii, 21 pp., 2 pls.
CHRISTY, C. [See DUTTON, TODD & CHRISTY (89).]
76. CLEVE, P. T. Report on Plankton collected by Mr Thorold Wulff during a voyage to and from Bombay. Arkiv Zool. i, pp. 329-381, pls. 16-19.
77. COHN, L. Zwei parasitische Infusorien aus *Discoglossus pictus*. Arch. Protistenk. iv, pp. 43-63, pl. 4.
Abstract in Bull. Inst. Pasteur ii, p. 853.
78. COUNCILMAN, W. T., MAGRATH, G. B. & BRINCKERHOFF, W. R. The pathological anatomy and histology of Variola. Stud. Path. Etiol. Variola 1904 (Office J. Med. Res. Boston), pp. 7-135, pls. 1-15.
[See II. c. 2.]
79. v. DADAY, E. Mikroskopische Süßwasserthiere aus Turkestan. Zool. Jahrb. Syst. xix, pp. 469-553, pls. 27-30, 5 text-figg. [See II. c. 1.]
80. DANGEARD, P. A. Contribution à l'étude des Diplozoaires l'*Arcella vulgaris*. Microgr. prep. xii, pp. 84-86. [See Zool. Rec. 1903 (76).]

81. DERVIEUX, E. La formazione geologica di Moncalieri ed il *Loess*. Atti Acc. Pont. Lincei lvii, pp. 28-32.
Occurrence of Foraminifera noted.
82. DIAZ VILLAR, J. M. Hematozoarios de los animales. Bol. Soc. espan. iii (1903), pp. 348-351.
83. DONOVAN, C. Human piroplasmosis. Lancet 1904, ii, pp. 744-750, 1 pl.
Abstract in Bull. Inst. Pasteur ii, p. 957.
84. DOUVILLÉ, R. Sur la géologie de la vallée du Guadalquivir. Bull. Soc. geol. France (4) iii, pp. 620 & 621.
85. —. Nummulitique du Sud-Ouest. Op. cit. (4) iv, pp. 283 & 284.
— [See also LEMOINE & DOUVILLÉ (200 & 201).]
LE DOUX, C. A. [See BOWHILL & LE DOUX (38).]
DREYER, G. [See SALOMONSEN & DREYER (297).]
86. DSCHUNKOWSKY, E. & LUHS, J. Die Piroplasmosen der Rinder. Centrbl. Bakter. (1) xxxv, orig. pp. 486-492, 3 pls. [See II. c. 2.]
Abstract in Bull. Inst. Pasteur ii, p. 258.
87. DUBOSCQ, O. Changement de génération et changement d'hôte chez *Trypanosoma* et *Spirochaete*. Arch. zool. exp. Notes (4) ii, pp. 155 & 156, 169-172, 188-193.
Detailed review of SCHAUDINN's work (301).
— [See also LÉGER & DUBOSCQ (192-195).]
88. DUCLOUX, L. Sur une Hémogrégarine de *Emys leprosa*. C.R. Soc. Biol. lvi, pp. 564 & 565.
89. DUTTON, J. E., TODD, J. L. & CHRISTY, C. Human trypanosomiasis on the Congo. Brit. Med. J. 1904, i, pp. 186-188.
Abstract in Bull. Inst. Pasteur ii, p. 304.
90. DYÉ, L. Les parasites des Culicides. Arch. parasit. ix, pp. 5-77, 6 text-figg.
Gives a general account of the Protozoan parasites which infest *Culicidæ*, and their life-history where known (pp. 18-44).
91. EDINGTON, A. On the occurrence of an epidemic among the domesticated animals in Mauritius, in which *Trypanosomata* were found in the blood. Rep. S. Afric. Ass. i, pp. 258 & 259.
92. ELMASSIAN, M. & MIGONE, E. Mal de Caderas chez les animaux domestiques et sauvages (épidémies parallèles). Ann. Inst. Pasteur xviii, pp. 587-589.
93. ENTZ, G. A Quarnero Tintinnidai. Allatt. Kozl. Magyar Tars. 1904, pp. 121-133, 36 text-figg.
94. D'ESPINE, A. & JUNG, —. La maladie du sommeil, avec une note sur le genre *Trypanosoma*. Arch. Sci. Nat. (4) xvii, pp. 308-330.
95. FAURÉ, E. Sur le pédoncule de quelques Vorticelles. C.R. Ac. Sci. cxxxviii, pp. 994-996.
Abstract in J. R. Micr. Soc. 1904, p. 660.
96. —. Sur la structure du protoplasma chez les *Vorticellidæ*. C.R. Soc. Biol. lvi, pp. 764-766.
97. —. Sur la structure du protoplasma chez les Infusoires ciliés. Op. cit. lvii, pp. 123-125.

98. [FAURÉ, E.] Note sur la structure du pédoncule du *Carchesium aselli* (Eng.). T. c. pp. 19 & 20.
99. —. Sur l'appareil contractile des *Vorticellidæ*. T. c. pp. 575-577.
100. —. L'appareil fixateur des Discotriches et ses indications au point de vue de la phylogénèse. T. c. pp. 464 & 465.
101. —. Sur la structure du pédoncule des *Vorticellidæ*. T. c. pp. 506-508.
102. —. La *Vorticella citrina* et la fonction adipogénique chez les *Vorticellinæ*. T. c. pp. 390-392.
103. —. Épuration et rajeunissement chez les *Vorticellidæ*. T. c. pp. 428-430.
104. —. Sur la formation et la structure de la coque des *Vaginicolinæ*. T. c. pp. 551 & 552.
105. —. Note sur un groupe nouveau d'*Opercularia*. Arch. anat. micr. vii, pp. 181-197, 4 text-figg.
106. —. La Vorticelle muguet. Nature (La) xxxii, ii, pp. 33 & 34, 2 figg. [Popular account of (95, 99, 101).]
107. FERRETTI, U. Di alcuni Protozoi e dei loro agenti di trasmissione. Boll. Soc. zool. Ital. xiii, pp. 259-264. [Hæmatozoa and Insects.]
108. *FLORENTIN, R. La faune des grottes de Saint-Reine. Feuille Natural. (4) xxxiv, pp. 176-179. [Protozoa.]
109. FOA, A. Ricerche intorno a due specie di Flagellati parassiti. Rend. Acc. Lincei xiii, 1, pp. 121-130, 6 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 336.
110. —. Recherche sulla riproduzione dei Flagellati. II. Processo di divisione delle Triconinfe. Op. cit. xiii, 2, pp. 618-625, 5 text-figg.
— [See also GRASSI & FOA (126).]
111. FORNASINI, C. Illustrazione di specie Orbignyane di "Nummulitidæ" istituite nel 1826. Boll. Soc. geol. Ital. xxii, pp. 395-398, pl. 14.
112. —. Distribuzione delle Testilarine negli strati miocenici d' Italia. Op. cit. xxiii, pp. 89-116.
113. FOWLER, G. H. Notes on the Anatomy of *Gazellella*. Quart. J. Micr. Sci. xlviii, pp. 483-488, 3 text-figg.
114. FRIEDBERG, W. Tekst do zeszytu szesnastego. Atlas geol. Galicyi xvi, 1903, 147 pp. [In Hungarian. Lists of Foraminifera given.]
115. GALLI-VALERIO, B. Die Piroplasmose des Hundes. Zusammenfassende Uebersicht. Centrbl. Bakter. (1) xxxiv, Ref. pp. 367-371, 3 text-figg.
Abstract in J. R. Micr. Soc. 1904, p. 661.
116. GIARD, A. Sur une faunule caractéristique des sables à diatomées d'Ambleteuse (Pas-de-Calais). C.R. Soc. Biol. lvi, pp. 295-298.
117. GIEMSA, G. Ein Vereinfachung und Vervollkommnung meiner Methylenazur-Methylenblau-Eosin-Färbemethode zur Erzielung der Romanowsky-Nochtschen Chromatinfärbung. Centrbl. Bakter. (1) xxxvii, Orig. pp. 308-311. [See II. G. 2.]
118. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. Mem. Mus. Belgique i (1903), 81 pp., 3 charts.

119. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. Trav. Lab. Arcachon vii, pp. 87-161, 63 text-figg.
Draws on the Protozoa for illustration.
120. GIRTY, G. H. *Triticites*, a new genus of Carboniferous Foraminifers. Amer. J. Sci. (4) xvii, pp. 234-240, 5 text-figg.
121. —. Note on the Carboniferous Fossils. (In "The Geology and Ore deposits of the Bisbee Quadrangle, Arizona.") Prof. Pap. U. S. Geol. Surv. xxi, pp. 46-54, pls. 10 & 11.
122. —. The Carboniferous Formations and Faunas of Colorado. Op. cit. xvi (1903), 546 pp., 10 pls.
123. GOLDSCHMIDT, R. Die Chromidien der Protozoen. Arch. Protistenk. v, pp. 126-144, 1 text-fig.
GORKA, S. [See SANDOR GORKA (299).]
124. GOUGH, G. C. A short note on the Foraminifera of the Larne district. Irish Natural. xiii, pp. 37 & 38.
125. —. Foraminifera in Glacial sands. T. c. pp. 257 & 258.
126. GRASSI, B. & FOA, A. Ricerche sulla riproduzione dei Flagellati. I. Processo di divisione delle Joenie e forme affini. Rend. Acc. Lincei xiii, 2, pp. 241-253, 17 text-figg.
Abstracts in J. R. Micr. Soc. 1904, p. 659, and Bull. Inst. Pasteur ii, p. 953.
127. GREELEY, A. W. Experiments on the physical structure of the Protoplasm of *Paramæcium* and its relation to the reactions of the organism to Thermal, Chemical and Electrical stimuli. Biol. Bull. vii, pp. 3-32.
128. GRUBER, A. Ueber *Amæba viridis* Leidy. Zool. Jahrb. Suppl. vii (Festschr. Weissmann) 1904, pp. 67-76, pl. 7.
Abstract in Zool. Zentrbl. xi, p. 423.
129. GUIART, J. Morphological considerations on the anterior extremity of the Trypanosome. J. trop. Medicine vii, pp. 6-8, 4 text-figg.
Criticised in Bull. Inst. Pasteur ii, p. 296.
130. GUPPY, R. J. On some samples of rock from Borings at Sangre-grande, Trinidad. Part I. Geol. Mag. (5) i, pp. 193-199, pl. 7.
[Reprint of Zool. Rec. 1903 (141).]
131. —. Observations on some of the Foraminifera of the Oceanic Rocks of Trinidad. T. c. pp. 241-250, pls. 8 & 9. [Reprint of Zool. Rec. 1903 (142).]
132. HÄCKER, V. Bericht über die Tripyleen-Ausbeute der Deutschen Tiefsee-Expedition. Verh. Deutsch. zool. Ges. xiv, pp. 122-156, 21 text-figg.
133. HALBEN, R. Theoretisches über die Bedeutung des Pigmentes für den Sehakt der Wirbellosen speziell der Protozoen. Biol. Centrbl. xxiv, pp. 283-288. [See II. B. 3.]
Abstract in J. R. Micr. Soc. 1904, p. 536.
134. HAMBURGER, C. Die Konjugation von *Paramæcium bursaria* Focke. Arch. Protistenk. iv, pp. 199-239, pls. 7-9, 2 text-figg.
135. HARTMANN, M. Die Fortpflanzungsweisen der Organismen, Neubenennung und Eintheilung derselben, erläutert an Protozoen, Volvocineen und Dicyemiden. Biol. Centrbl. xxiv, pp. 18-61, 8 text-figg.
Abstract in J. R. Micr. Soc. 1904, p. 313.

136. HARTOG, M. Some problems of Reproduction.—II. *Quart. J. Micr. Sci.* xlvii, pp. 583-608.
137. HERTEL, E. Ueber Beeinflussung des Organismus durch Licht, speziell durch die chemisch wirksamen Strahlen. *Zeitschr. allg. Physiol.* iv, pp. 1-43, 1 pl., 1 text-fig.
138. HERTWIG, R. Ueber physiologische Degeneration bei *Actinosphaerium eichhorni*. Nebst Bemerkungen zur Aetiologie der Geschwülste. *Denk. Ges. Jena (Festschr. Haeck.)* xi, pp. 301-354, pls. 9-12.
139. ——. Ueber Konjugation von *Dileptus gigas*. *SB. Ges. Munchen* xx, 1, pp. 1-3.
140. HESSE, E. *Thelohania legeri* n. sp., Microsporidie nouvelle, parasite des larves d'*Anopheles maculipennis* Meig. *C.R. Soc. Biol.* lviii, pp. 570 & 571.
141. ——. Sur le développement de *Thelohania legeri* Hesse. *T. c.* pp. 571 & 572, 10 text-figg.
142. HODGES, A. D. Sleeping-sickness: a résumé. *Lancet* 1904, ii, pp. 290-292.
143. *HOFER, B. Die Schlafzucht des Karpfens. *Allg. Fischerei Zeitung* xix, pp. 48 & 49, 1 text-fig.
144. ——. *Handbuch der Fischkrankheiten*. München (Verlag allgm. Fischereizeitung) 1904, 359 pp., 18 coloured plates, 22 text-figg.
Review in *Verh. Ges. Wien* liv, pp. 358-361; abstracts in *J. R. Micr. Soc.* 1904, p. 659, and *Centrl. Bakter.* (1) xxxiv, Ref. p. 717.
145. HOLLAND, R. Notes on *Nummulites* in the Turkish Rocks described by Col. English. *Quart. J. Geol. Soc.* lx, pp. 292-295, pl. 25.
146. *HOLMES, J. D. Evolution of the *Trypanosoma evansi*. *J. comp. Path. and Therap.* xvii, pp. 210-214, 2 pls.
Abstract in *Bull. Inst. Pasteur* ii, p. 954.
147. HUTTON, F. W. *Index Faunæ Novæ Zealandiæ*. London (Dulau & Co.) 1904, pp. (viii+372). [See III. A.]
148. IMMERMAN, F. Die Tripyleen-Familie der Aulacanthiden der Plankton-Expedition. *Ergebn. Plankton-Exped. Humboldt-Stiftung* iii, L. h., 7 pls., 1 chart.
149. JAHN, J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. *Jahrb. geol. Reichsanst.* liv, pp. 75-90.
150. JAKIMOFF, W. L. Zur Biologie der Trypanosomen der Nagana und des Mal de Caderas. *Centrl. Bakter.* (1) xxxvii, Orig. pp. 668-677.
151. JENNINGS, H. S. A method of demonstrating the external discharge of the contractile vacuole. *Zool. Anz.* xxvii, pp. 656-658, 1 fig.
[See II. G. 2.]
Abstract in *J. R. Micr. Soc.* 1904, p. 421.
152. ——. Physical imitations of the activities of *Amœba*. *Amer. Natural.* xxxviii, pp. 625-642.
The mechanical factors at work in the physical imitations are essentially different from the activities of the living animal.
153. JENSEN, H. J. Contributions to a knowledge of Australian Foraminifera. Part I. *P. Linn. Soc. N. S. Wales* xxix, pp. 810-831, pl. 23.

154. JUKES-BROWNE, A. J. The Cretaceous Rocks of Britain. Vol. III. The Upper Chalk of England. Mem. geol. Surv. U. K. 1904, pp. (x+566), 9 pls., 79 text-figg.
155. KEMMA, A. Les caractères structuraux de la coquille des Foraminifères flottants. Bull. Soc. malac. Belgique xxxviii, 1903 (publ. 1904), pp. cix-cxxvii.
156. KEYSSELITZ, G. Ueber *Trypanophis grobbeni* (*Trypanosoma grobbeni* Poche). Arch. Protistenk. iii, pp. 367-375, 3 text-figg. Abstract in Bull. Inst. Pasteur ii, p. 428.
157. —. Über flagellate Blutparasiten bei Süßwasserfischen. SB. Ges. naturf. Berlin 1904, pp. 285-296.
Preliminary account of important work on piscine Trypanosomes confirmatory of Léger's investigations concerning an alternation of hosts, conjugation, etc.
158. KINKELIN, F. Die Originale der paläontologischen Sammlung im Senckenbergischen Museum und die auf dieselben bezügliche Literatur. Ber. Senckenberg. Ges. 1903, pp. 1-88. [Lists of Foraminiferan specimens.]
159. KOCH, R. Remarks on Trypanosome diseases. [Translation.] Brit. Med. J. 1904, ii, pp. 1445-1449.
General summary of the various Trypanosomes and trypanosomoses.
160. * —. Rhodesian redwater or African coast fever. J. comp. Path. & Therap. xvi (1903), pp. 273 & 390.
Abstract in Bull. Inst. Pasteur ii, p. 302.
161. DE KORTÉ, W. E. The parasites of small-pox, vaccinia and varicella. Lancet 1904, ii, pp. 1776-1778.
162. KÜSTER, E. Ciliaten in Valoniazellen. Arch. Protistenk. iv, pp. 384-390.
LABBÉ, M. [See BEZANÇON & LABBÉ (19).]
163. LANKESTER, E. R. The sleeping sickness. Quart. Rev. July, 1904, pp. 113-138, 7 text-figg.
Comprehensive review of the subject, including abstract of Schaudinn's work; interesting remarks on the Bionomics of parasites.
164. LAVERAN, A. Action du sérum humain sur quelques Trypanosomes pathogènes; action de l'acide arsénieux sur *Tr. gambiense*. C.R. Ac. Sci. cxxxviii, pp. 450-453.
Abstract in Contrbl. Bakter. (1) xxxiv, Ref. p. 813.
165. —. Sur l'agent pathogène de la trypanosomiase humaine, *Tr. gambiense* Dutton. T. c. pp. 841-844.
Abstracts in Contrbl. Bakter. (1) xxxv, Ref. p. 343 and Bull. Inst. Pasteur ii, p. 485.
166. —. Le trypanoth dans le traitement de quelques trypanosomiasés. Op. cit. cxxxix, pp. 19-22.
167. —. Immunité naturelle des Cynocéphales pour les trypanosomiasés; activité de leur sérum sur les Trypanosomes. T. c. pp. 177-179.
168. —. Les trypanosomiasés dans l'Ouest africain français. T. c. pp. 658-662. [See II. c. 2.]
169. —. Sur l'existence d'une trypanosomiase des Équidés dans la Guinée française. C.R. Soc. Biol. lvi, pp. 326 & 327. [See II. c. 2.]

170. [LAVERAN, A.] Sur des Culicides de la Guinée française et sur l'index endémique du paludisme dans cette région. T. c. pp. 555 & 556.
171. —. Sur un nouveau Trypanosome d'une grenouille. Op. cit. lvii, pp. 158-160, 2 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 770.
172. —. Trypanoplasme et Trypanosome du vairon. T. c. pp. 250 & 251.
173. — & MESNIL, F. Nouvelles observations sur *Piroplasma donovani* Lav. et Mesn. C.R. Ac. Sci. cxxxviii, pp. 187-189.
Abstract in Bull. Inst. Pasteur ii, p. 214.
174. — & —. Sur un Trypanosome d'Afrique pathogène pour les Équidés, *Tr. dimorphon* Dutton & Todd. T. c. pp. 732-737, 7 text-figg.
Abstracts in J. R. Micr. Soc. 1904, p. 537, and Centrbl. Bakter. (1) xxxv, Ref. p. 344.
175. — & —. Infections naturelles de rats blancs par *Trypanosoma lewisi*. C.R. Soc. Biol. lvii, pp. 247-249. [See II. G. 1, III. C.]
Abstract in Bull. Inst. Pasteur ii, p. 987.
176. — & —. Trypanosomes et trypanosomiasés. Paris (Masson et Cie), 1904, 8vo, pp. (xi+417), 1 pl., 61 text-figg.
Comprehensive general account.
Abstract in Bull. Inst. Pasteur ii, p. 696.
177. LEARDI, Z. Foraminiferi eocenici di S. Genesio (Collina di Torino). Atti Mus. Milano xliii, pp. 158-171.
178. —. Il *Conulites aegyptiensis* Chapman e la *Baculogypsina sphaerulata* (Parker e Jones) di S. Genesio. T. c. pp. 182-189, pl. 5.
179. LEBAILLY, C. Sur quelques Hémoflagellés des Téléostéens marins. C.R. Ac. Sci. cxxxix, pp. 576 & 577.
Abstract in Bull. Inst. Pasteur ii, p. 990.
— [See also BRUMPT, E. & LEBAILLY, C. (50).]
LEDINGHAM, J. C. [See MARCHAND & LEDINGHAM (221-223).]
180. LÉGER, L. Sur la morphologie du *Trypanoplasma* des vairons. C.R. Ac. Sci. cxxxviii, pp. 824 & 825. [For figures see (181).]
Abstracts in J. R. Micr. Soc. 1904, p. 421, and Centrbl. Bakter. (1) xxxv, Ref. p. 342.
181. —. Sur la structure et les affinités des Trypanoplasmes. T. c. pp. 856-859, 5 text-figg.
Abstracts in Centrbl. Bakter. (i) xxxv, Ref. p. 341, and Bull. Inst. Pasteur ii, p. 427.
182. —. Sur la sporulation du *Triactinomyxon*. C.R. Soc. Biol. lvi, pp. 844-846, 4 text figg.
183. —. Considérations sur le genre *Triactinomyxon* et les Actinomyxidies. T. c. pp. 846-848.
184. —. Sur les Hémoflagellés du *Cobitis barbatula* L. I. *Trypanosoma barbatulae* n. sp. Op. cit. lvii, pp. 344 & 345.
185. —. *Trypanoplasma varium* n. sp., parasite du sang de *Cobitis barbatula* L. T. c. pp. 345-347.
186. —. Sur un nouveau Flagellé parasite des Tabanides. T. pp. 613-615, 6 text-figg.

187. [LÉGER, L.] Sur les affinités de l'*Herpetomonas subulata* et la phylogénie des Trypanosomes. T. c. pp. 615-617.
188. —. La reproduction sexuée chez les *Stylorhynchus*. Arch. Protistenk. iii, pp. 303-357, pls. 13 & 14, 8 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 521.
189. —. Sporozoaires parasites de l'*Embia solieri* Rambur. T. c. pp. 358-366, 7 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 521.
190. —. Sur les *Embia* du midi de la France. C.R. Ass. Franc. xxxii, 1, p. 228. [Mentions discovery of the Gregarines described in (189).]
191. —. Sur les Actinomyxidies. T. c. pp. 228 & 229. [Brief notice of (182 & 183).]
192. — & DUBOSCQ, O. Nouvelles recherches sur les Grégaires et l'épithélium intestinal des Trachéates. Arch. Protistenk. iv. pp. 335-383, pls. 13 & 14, 11 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 991.
193. — & —. Notes sur les Infusoires endoparasites. I. Les *Astomata* représentent-ils un groupe naturel? Arch. zool. exp. Notes (4) ii, pp. 98-100.
Abstract in Bull. Inst. Pasteur ii, p. 702.
194. — & —. [Same title.] II. *Anoplophrya brasili* Léger & Duboscq, parasite d'*Audouinia tentaculata*. Arch. Zool. exp. (4) ii, pp. 337-343, 2 text-figg.
195. — & —. [Same title.] III. *Opalina saturnalis* Léger & Duboscq, parasite de *Box boops* L. T. c. pp. 343-356, pl. 14, 1 text-fig.
196. LEISHMAN, W. B. Note on the nature of the parasitic bodies found in tropical splenomegaly. Brit. Med. J. 1904, i, p. 303.
Abstract in Bull. Inst. Pasteur ii, p. 215.
197. —. A method of producing chromatin staining in sections. J. Hygiene iv, pp. 434-436. [See II. c. 2.]
198. LEMMERMANN, E. Beiträge zur Kenntniss der Planktonalgen. XIX. Das Phytoplankton der Ausgrabenseen bei Plön. Forschber. Plön xi, pp. 289-311, 17 text-figg.
199. LEMOINE, P. Sur la présence de l'Oligocène à Madagascar. C.R. Ac. Sci. cxxxviii, pp. 311-313. [Occurrence of Foraminifera.]
200. — & DOUVILLÉ, R. Résultats paléontologiques et stratigraphiques de l'étude des Lépidocyclines. Bull. Soc. geol. France (4) iv, pp. 347-349. [Brief account of (201).]
201. — & —. Sur le genre *Lepidocyclina* Gümbel. Mem. Soc. geol. France xii (ii), 41 pp., 3 pls., 3 text-figg.
202. LESAGE, A. Culture de l'amibe de la dysenterie des pays chauds. C.R. Ac. Sci. cxxxix, pp. 1237-1239.
203. LINGARD, A. Can the "*Piroplasma bigeminum*" find a habitat in the human subject? Centrbl. Bakter. (1) xxxvi, Orig. pp. 214-216, 1 pl.
204. —. The *Trypanosoma* of Dourine and its life-history. Op. cit. 1) xxxvii, Orig. pp. 537-547.
LINTON, S. F. [See THOMAS & LINTON (343).]

205. LO BIANCO, S. Pelagische Tiefseefischerei der "Maja" in der Umgebung von Capri. Jena (G. Fischer), 1904, pp. (vi+91), 41 pls., 1 chart.
206. LOEWENTHAL, W. Das Auftreten eines Mikronukleus-artigen Gebildes bei *Opalina ranarum*. Arch. Protistenk. iii, pp. 387-390, 10 text-figg. Abstract in Bull. Inst. Pasteur ii, p. 429.
207. LORD, J. E. On *Euglena deses*. Tr. Manchester Micr. Soc. 1903, pp. 75 & 76, pl. 3, fig. 2.
208. ——. On a peculiar habit of *Pamphagus hyalinus*. T. c. pp. 76-78, pl. 3, fig. 1.
Low, G. C. [See MONSON & Low (219 & 220).]
209. LÜHE, M. Bau und Entwicklung der Gregarinen. i. Theil: Die Sporozoitien, die Wachstumsperiode und die ausgebildeten Gregarinen. (Zusammenfassende Uebersicht). Arch. Protistenk. iv, pp. 88-198, 31 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 701.
210. ——. Flagellate Blutparasiten als Krankheitserreger bei Thieren und Menschen. SB. Ges. Königsb. xlv, pp. 48-53. [General review of the principal forms of Trypanosomes.]
211. ——. Neue Untersuchungen über Trypanosomen und ähnliche Blutparasiten. T. c. pp. 85-88. [Mainly a full abstract of Schaudinn's work (301).]
LUHS, J. [See DSCHUNKOWSKY & LUHS (86).]
212. LUPI, A. Fauna miocenica presso Tagliacozzo. Boll. Soc. geol. Ital. xxiii, pp. xxviii & xxix. [Occurrence of Foraminifera.]
213. LUTZ, A. & SPLENDORE, A. Ueber Pebrine und verwandte Mikrosporidien. Centrbl. Bakter. (1) xxxvi, Orig. pp. 645-650, 2 pls. and 1 text-fig.
Abstract in Bull. Inst. Pasteur ii, p. 905.
214. LUZZANI, L. Nachweisung des spezifischen Parasiten in einem Falle von Tollwuth beim Menschen. Centrbl. Bakter. (1) xxxvi, Orig. pp. 540-545, 1 pl. [See II. c. 2.]
215. MACALLUM, A. B. The Palaeochemistry of the ocean in relation to animal and vegetable protoplasm. Stud. Univ. Toronto (Physiolog. ser. 5) 1904, 30 pp.
On the part played by Foraminifera in forming deposits.
216. ——. [Same title.] Tr. Canad. Inst. vii (iii), pp. 535-562. [Identical with (215).]
217. *MAGINZKY, R. S. *Chilodon notamoibos* nov. spec. Tageb. zool. sect. Ges. Naturw. Moskau iii (v), (1903) pp. 1-5, 1 pl., 6 text-figg. [In Russian.]
Abstract in Zool. Zentrbl. xi, p. 191.
218. MAGRATH, G. B. & BRINCKERHOFF, W. R. On the occurrence of *Cytoryctes variolæ* Guarnieri, in the skin of the monkey inoculated with variola virus. Stud. Path. Etiol. Variola 1904 (Office J. Med. Res. Boston), pp. 173-179, pls. 21 & 22.
— & ——. [See also COUNCILMAN, MAGRATH, & BRINCKERHOFF (78).]

219. MANSON, P. & LOW, G. C. The Leishman-Donovan body and tropical splenomegaly. *Brit. Med. J.* 1904, i, pp. 183-186, 12 figg.
Abstract in *Bull. Inst. Pasteur* ii, p. 214.
220. — & —. The Leishman-Donovan body in ulcerated surfaces. A possible route of its escape from the human body. *J. trop. Medicine* vii, p. 239.
221. MARCHAND, F. & LEDINGHAM, J. C. On the question of *Trypanosoma*-infection in man. *Lancet* 1904, i, pp. 149 & 150, 1 text-fig. [Translation of (222).]
222. — & —. Zur Frage der *Trypanosoma*-Infektion beim Menschen. *Centrbl. Bakter.* (1) xxxv, orig. pp. 594-598, 1 text-fig.
Abstract in *Bull. Inst. Pasteur* ii, p. 214.
223. — & —. Ueber Infektion mit "Leishman'schen Körperchen" (Kala-Azar?) und ihr Verhältniss zur Trypanosomen-Krankheit. *Zeitschr. Hyg.* xlvii, pp. 1-40, 2 pls.
Abstracts in *Centrbl. Bakter.* (1) xxxv, Ref. p. 345; and *Bull. Inst. Pasteur* ii, p. 607.
224. MARINO, F. Coloration des Protozoaires et observations sur la neutrophilie de leur noyau. *Ann. Inst. Pasteur* xviii, pp. 761-766, pl. 9.
225. MARKL, —. Beitrag zur Kenntniss der Naganainfektion bei Meer-schweinchen. *Centrbl. Bakter.* (1) xxxvii, orig. pp. 530-537, 1 pl.
226. MARPMANN, G. Ueber die Präparation der Diatomaceen, Foraminiferen, Polycystineen und Spongillen. *Zeitschr. ang. Mikr.* x, pp. 141-145.
[See II. G. 2.]
227. MARTELLI, A. Il Flysch del Montenegro sud-orientale. *Rend. Acc. Lincei* 12, ii, pp. 166-171.
228. MARTIN, G. C. Radiolaria. Maryland geol. Surv. (Miocene). Baltimore, 1904, pp. 447-459, pl. 130.
229. MARTIN, K. Jungtertiäre Kalksteine von Batjan und Obi. *Samm. geol. Mus. Leiden* (1) vii, pp. 225-230.
230. *MARTINI, E. Vergleichende Beobachtungen über Bau und Entwicklung der Tsetse u. Ratten-Trypanosomen. *R. Koch's Festschr. Jena* (1903), pp. 220-238, 2 pls., 33 text-figg.
Abstract in *Bull. Inst. Pasteur* ii, p. 379.
231. DI MAURO, S. Sopra un nuovo Infusorio ciliato parassita dello *Strongylocentrotus lividus* e dello *Sphaerechinus granularis* (*Anophrys echini* n. sp.). *Boll. Acc. Gioen.* lxxxi (May), pp. 13-19, 3 text-figg.
232. MAYER, P. Protozoa. Bericht für 1903. *Zool. Jahresber.* 1903 (publ. 1904), 26 pp.
[See II. G. 3.]
233. MEISSNER, W. Notiz über das Plankton des Flusses Murgab (Merw, Turkestan). *Zool. Anz.* xxvii, pp. 648-650, 3 text-figg.
234. MESNIL, F. [No title. Important note on work of Sergeant, confirmatory of Schaudinn (301).] *C.R. Soc. Biol.* lvii, p. 164.
235. —, NICOLLE, F. & REMLINGER, P. Sur le Protozoaire du bouton d'Alep. *C.R. Soc. Biol.* lvii, pp. 167-169.
Abstract in *Bull. Inst. Pasteur* ii, p. 820.
— [See also CAULLERY & MESNIL (64-66) & LAVERAN & MESNIL (173-176).]
MIGONE, E. [See ELMASSIAN & MIGONE (92).]

236. MILLETT, F. W. Report on the Recent Foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S. Part xvi. J. R. Micr. Soc. 1904, pp. 489-506, pl. 10.
237. —. [Same title.] Part xvii. (Conclusion.) T. c. pp. 597-609, pl. 11.
238. MITROPHANOW, P. Note sur les corpuscules basaux des formations vibratiles. Arch. zool. exp. Notes (4) ii, pp. 167-169, text-figg. 3 & 4.
Abstract in J. R. Micr. Soc. 1904, p. 659.
239. —. Étude sur la structure, le développement, et l'explosion des trichocystes des Paramécies. Arch. Protistenk. v, pp. 78-91, 9 text-figg.
240. *—. Der Kernapparat der Paramécien. Arb. Lab. Warsaw xxxi (1903), pp. 1-48, 31 text-figg. [In Russian.]
Abstracts in Zool. Zentrbl. xi, p. 509, and J. R. Micr. Soc. 1904, p. 660.
241. *—. Ueber Bau, Entwicklung und Thätigkeit der Trichocysten bei *Paramécium*. Op. cit. xxxii, pp. 1-18, 9 text-figg. [In Russian.]
Abstracts in Zool. Zentrbl. xi, p. 510, and J. R. Micr. Soc. 1904, p. 660.
242. MONTI, R. Limnologische Untersuchungen über einige italienische Alpengseen. Forschber. Plon xi, pp. 252-275.
243. MOORE, S. J. Some observations pointing to an intracorpuseular stage of development in the Trypanosome. Lancet 1904, ii, p. 950.
244. MUNTHE, H. Om Faunan i vestgötslätterns Yoldialera mellan Skara-Herrljunga och veuern. Sveriges geol. Unders. Afh., Ser. c, No. 187, 46 pp., 1 chart. [List of Foraminifera, p. 40.]
245. MURRAY, J. Biology of the Lochs of the Tay Basin. Geogr. Journal xxiii, pp. 55-61.
246. —. [Same title.] Scott. geogr. Mag. xx, pp. 41-47.
247. NICOLLE, C. Sur une Hémogrégarine du Crapaud. C.R. Soc. Biol. lvi, pp. 330-332.
248. —. Sur une Hémogrégarine karyolysante de *Gongylus ocellatus*. T. c. pp. 608 & 609.
249. —. Sur une Hémogrégarine de *Lacerta ocellata*. T. c. pp. 912-914, 8 text-figg.
NICOLLE, F. [See also MESNIL, NICOLLE, & REMLINGER (235).]
NISHIKAWA, T. [See OKAMURA & NISHIKAWA (253).]
250. NOBRE, A. Subsídios para o estudo da Fauna marinha do sul de Portugal. Ann. Sci. nat. Porto viii (1903), pp. 153-160.
251. NOVY, F. G. & McNEAL, W. J. On the cultivation of *Trypanosoma brucei*. J. infect. Diseases i, pp. 1-30, 3 tables.
Abstract in Bull. Inst. Pasteur ii, p. 246.
252. NUTTALL, G. H. Canine piroplasmosis.—I. J. Hygiene iv, pp. 219-257, 7 text-figg. and 7 charts.
253. OKAMURA, K. & NISHIKAWA, T. A List of the Species of *Ceratum* in Japan. Annot. zool. Japon. v, pp. 121-131, pl. 6.
254. OSTENFELD, C. H. On two new marine species of Heliozoa occurring in the plankton of the North Sea and the Skager Rak. Medd. komn. Havundersog. i (ii), 5 pp., 7 text-figg.

255. [OSTENFELD, C. H.] & PAULSEN, O. Planktonprøver fra Nord-Atlanterhavet (c. 58°-60° N. Br.), samlede i 1899 af Dr K. J. V. Steenstrup. Medd. Gronland xxvi, pp. 143-207. (Résumé in English, pp. 208-210.)
256. PAEHLER, F. Ueber die Morphologie, Fortpflanzung und Entwicklung von *Gregarina ovata*. Arch. Protistenk. iv, pp. 64-87, pls. 5 & 6. Abstract in Bull. Inst. Pasteur ii, p. 853.
PANISSET, —. [See VALLÉE & PANISSET (347).]
257. PANSE, O. *Trypanosoma theileri* (?) in Deutsch-Ostafrika. Zeitschr. Hyg. xlv, pp. 376-378, 1 fig.
Abstract in Centrbl. Bakter. (1) xxxv, Ref. p. 405.
258. PAULSEN, O. Plankton investigations in the waters round Iceland in 1903. Medd. komm. Havundersog. i (i), 48 pp., 12 text-figg., 2 maps.
——. [See also OSTENFELD & PAULSEN (255).]
259. PENARD, E. Quelques nouveaux Rhizopodes d'eau douce. Arch. Protistenk. iii, pp. 391-422, 11 text-figg.
260. —. Étude sur la *Chlamydomyxa montana*. Op. cit. iv, pp. 296-334, 19 text-figg.
261. —. Sur la décharge de la vésicule contractile dans l'*Amœba terricola*. Rev. Suisse Zool. xii, pp. 659-652, 2 text-figg.
262. —. Les Héliozoaires d'eau douce. Genève (Kündig.) 1904, 341 pp., numerous text-figg.
Review in Bull. Inst. Pasteur ii, p. 428.
263. PEREZ, C. Sur une Microsporidie parasite du *Carcinus maenas*. C.R. Soc. Biol. lvii, pp. 214 & 215.
Abstract in Bull. Inst. Pasteur ii, p. 810.
264. —. Sur un organisme nouveau, *Blastulidium paedophthorum*, parasite des embryons de Daphnies. Pr.-verb. Soc. Sci. Bordeaux 1902-1903, pp. 75 & 76. [Brief account of Zool. Rec. 1903 (294).]
Abstract in J. R. Micr. Soc. 1904, p. 537.
265. PETERS, A. W. Metabolism and division in Protozoa. P. Amer. Ac. xxxix, pp. 441-516.
266. PETRIE, G. F. A note on the occurrence of a Trypanosome in the rabbit. Centrbl. Bakter. (1) xxxv, Orig. pp. 484-486.
Abstract in Bull. Inst. Pasteur ii, p. 250.
267. *PETSCHENKO, B. Ueber Veränderungen im Bau des Kernes bei *Paramœcium* in natürlichen Existenzbedingungen. Arb. Lab. Warsaw xxx, 1903. [In Russian.]
Abstract in Zool. Zentrbl. xi, p. 509.
PHILIP, W. M. [See WILLEY, CHALMERS & PHILIP (359).]
268. PHILLIPS, L. Note on the occurrence of the Leishman-Donovan parasite in Arabia and Egypt. J. trop. Medicine vii, pp. 236 & 237.
269. PLEHN, M. Ueber die Drehkrankheit der Salmoniden. [*Lentospora cerebrealis* (Hofer) Plehn.] (Vorläufige Mittheilung.) Arch. Protistenk. v, pp. 145-166, pl. 5, 7 text-figg.
270. POPOFSKY, A. Die Acantharia der Plankton-Expedition. Theil i. *Acanthometrea*. Ergebn. Plankton-Exped. Humboldt-Stiftung iii, 1, f. 1, 158 pp., 12 pls., 14 text-figg.
271. POWOW, M. *Opercularia clepsinis* nov. sp. Zool. Anz. xxvii, pp. 340-343, 2 text-figg.

272. PREVER, P. L. Osservazioni sopra alcune nuove *Orbitoides*. Atti Acc. Torino xxxix, pp. 981-988, 1 pl.
273. —. La *Paronea curvispira* (Mngh.). Riv. Ital. pal. x, pp. 28-41, 1 table.
274. —. Osservazioni sulla sottofamiglia delle *Orbitoidinae*. T. c. pp. 111-128, pl. 6.
275. —. Considerazioni sullo studio delle Nummuliti. Boll. Soc. geol. Ital. xxii, pp. 461-487, 7 text-figg., 1 table.
276. — & RZEHA, A. Ueber einige Nummuliten und Orbitoiden von österreichischen Fundorte. Verh. Ver. Brunn xlii, pp. 190-201, 2 pls.
277. PROWAZEK, S. Die Entwicklung von *Herpetomonas*, einem mit den Trypanosomen verwandten Flagellaten. (Vorläufige Mittheilung.) Arb. Kaiserl. Gesundheitsamte xx, pp. 440-452, 7 text-figg.
Abstracts in Centrbl. Bakter. (1) xxxv, p. 313, and Bull. Inst. Pasteur ii, p. 296.
278. —. Untersuchungen über einige parasitische Flagellaten. Op. cit. xxi, pp. 1-41, pls. 1-4, 2 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 471.
279. —. *Entamæba buccalis* n. sp. (Vorläufige Mittheilung). T. c. pp. 42-44.
Abstract in Bull. Inst. Pasteur ii, p. 522.
280. QUILTER, H. J. Note on a method of taking internal casts of Foraminifera. J. Quekett Club (2), viii (1903), pp. 551 & 552.
281. RAYMOND, G. Sur un parasite très commun dans les moules (*Mytilus edulis*), l'*Anoplophrya mytili* de Quenn. Microgr. prep. xii, pp. 215 & 216, 2 text-figg.
282. READE, T. M. On some borings at Altcar made by the Lancashire and Yorkshire Railway Company. P. Liverp. geol. Soc. ix (iv), pp. 359-369.
283. REBOUL, P. Catalogue des types paléontologiques contenus dans les collections de Grenoble. Trav. Lab. geol. Grenoble vii (i), pp. 127-149. [Foraminifera, pp. 131, 136.]
REMLINGER, P. [See MESNIL, NICOLLE & REMLINGER (235).]
284. RENAULT, B. Sur quelques nouveaux Infusoires fossiles. Bull. Soc. Autun xvi (1903), Pr.-verb. pp. 25-27, pl. A.
285. ROGERS, L. Preliminary note on the development of *Trypanosoma* in cultures of the Cunningham-Leishman-Donovan bodies of cachexial fever and Kala-Azar. Lancet 1904, ii, pp. 215 & 216.
286. —. On the development of Flagellated Organisms (Trypanosomes) from the Spleen Protozoic Parasites of Cachexial Fevers and Kala-Azar. Quart. J. Micr. Sci. xlviii, pp. 367-377, pl. 25.
Abstract in Bull. Inst. Pasteur ii, p. 957.
287. —. Cachexial fever in India associated with Cunningham-Leishman-Donovan bodies. Brit. Med. J. 1904, ii, pp. 644-650, 3 text-figg. [See (286) for fuller account relating to the parasites themselves.]
Abstract in Bull. Inst. Pasteur ii, p. 607.
288. —. Note on the rôle of the Horse-Fly in the transmission of *Trypanosoma*-infection. T. c. pp. 1454 & 1455.

289. ROSS, R. A new parasite of man. Thompson Yates Lab. Rep. (5), ii, pp. 79-82, 1 pl.
Abstract in Bull. Inst. Pasteur ii, p. 214.
290. — & BOYCE, R. Note on the discovery of *Trypanosoma gambiense* Dutton. T. c. p. 85. [See II. G. 3.]
291. ROUGET, J. Trypanosome de la Dourine; son inoculation aux souris et aux rats. C.R. Soc. Biol. lvi, pp. 744 & 745.
292. RUATA, G. R. Trypanosomiasis in man. J. trop. Medicine vii, pp. 147-149, 167 & 168, 184-186, 198-200.
293. —. Kala-Azar, or tropical splenomegaly. T. c. pp. 350-352.
294. *RZEHAŁ, A. Ueber das Vorkommen von Foraminiferen in den Ablagerungen der pannonischen Stufe in Mähren. Zeitschr. Mähr. Landesmus iv, pp. 55-69.
— . [See also PREVER & RZEHAŁ (276).]
295. SABRAZÈS, J. & MURATET, L. Trypanosome de l'anguille. Processus de division. C.R. Soc. Biol. lvi, pp. 66 & 67.
296. — & —. Vitalité du Trypanosome de l'anguille dans des sérosités humaines et animales. Osmonocivité de l'eau. T. c. p. 159.
297. SALMONSEN, C. J. & DREYER, G. Recherches sur les effets physiologiques du radium. C.R. Ac. Sci. cxxxviii, pp. 1543-1545.
298. SAMBON, L. The elucidation of sleeping-sickness. J. trop. Medicine vii, pp. 61-63 & 68-74. (Discussion by various workers. T. c. pp. 87-91.)
299. SANDOR GORKA. Az alomkor es okozója. Termes. Kozl. Magyar Tars. 1904, pp. 284-288, 2 text-figg.
Summary of knowledge relating to sleeping-sickness, its parasite, and transmitting agent.
300. *SAUL, H. Ueber Reinculturen von Protozoën. Arch. Physiol. 1904, pp. 374-376.
301. SCHAUDINN, F. Generations- und Wirthswechsel bei *Trypanosoma* und *Spirochete* (Vorläufige Mittheilung). Arb. Kaiserl. Gesundheitsamte xx, pp. 387-439, 20 text-figg. [An English translation runs through the J. trop. Medicine for 1904.]
Review in Bull. Inst. Pasteur ii, p. 199; abstract in Centrbl. Bakter. (1) xxxv, p. 312.
302. —. Protozoen Literatur 1904. I. Theil. Arch. Protistenk. iv, pp. 391-400. [See II. G. 3.]
303. SCHEWIAKOFF, W. Beiträge zur Kenntniss der Radiolaria-Acanthometrea. Mem. Ac. St. Petersb. xii, 10 (1902), 40 pp., 4 pls.
Abstract in J. R. Micr. Soc. 1903, p. 503.
304. SCHILLING, A. Ueber die Tsetsekrankheit oder Nagana. Arb. Kaiserl. Gesundheitsamte xxi, pp. 476-536.
Abstract in Bull. Inst. Pasteur ii, p. 916.
305. SCHLUMBERGER, C. Quatrième note sur les Orbitoïdes. Bull. Soc. geol. France (4) iv, pp. 119-135, pls. 3-6, 7 text-figg.
306. — & CHOFFAT, P. Note sur le genre *Spirocyclina* Munier-Chalmas et quelques autres genres du même auteur. T. c. pp. 358-368, pls. 9 & 10, 3 text-figg.

307. SCHOENICHEN, W. Der physiologische Tod bei den Protozoen. *Zeitschr. naturw.* lxxvii, pp. 128-130.
Brief account of HERTWIG's work (138) on degeneration in *Actinosphaerium*.
308. SCHUBERG, A. Bemerkungen zu einigen Beobachtungen Feinberg's an "mit Coccidien angefüllten Darmcysten vom Kaninchen." *Arch. Protistenk.* v, pp. 122-125. [See II. c. 2.]
309. SCHUBERT, R. J. Die Ergebnisse der mikroskopischen Untersuchung der bei der ärarischen Tiefbohrung zu Wels durchteuften Schichten. *Jahrb. geol. Reichsanst.* liii, pp. 385-422, pl. 19.
310. SCHÜLLER, M. Ueber die Chromatinkörper der Krebs- und Sarkomparasiten des Menschen. *Centrbl. Bakter.* (1) xxxvii, Orig. pp. 547-566, 1 pl.
311. SERGENT, E. & E. Note préliminaire sur une trypanosomiase des Dromadaires d'Algérie. *C.R. Soc. Biol.* lvi, pp. 120-122.
312. —. Seconde note sur une trypanosomiase des Dromadaires d'Algérie. *T. c.* pp. 914-916.
313. —. Sur un Trypanosome nouveau, parasite de la grenouille verte. *T. c.* pp. 123 & 124, 1 text-fig.
Abstract in *Bull. Inst. Pasteur* ii, p. 297.
314. —. Sur une Hémogrégarine, parasite de *Testudo mauritanica*. *T. c.* pp. 130 & 131.
315. —. Sur les Hématozoaires des Oiseaux d'Algérie. *T. c.* pp. 132 & 133. [See III. c.]
— [See also MESNIL (234).]
316. SHVEIER, A. V. Ueber den Bau und die Vermehrung der *Tintinnoides* (Vorläufige Mittheilung). *Protok. St. Peterb. Obsch.* xxxv, i, pp. 158-160. [In Russian. Abstract in German. *T. c.* p. 264.]
317. SIDEBOTTOM, H. Report on the Recent Foraminifera from the Coast of the Island of Delos (Grecian Archipelago). *Mem. Manchester Soc.* xlviii, Mem. v, 26 pp., pls. 2-5, 10 text-figg.
318. SIEGEL, J. Beiträge zur Kenntniss des Vaccineerregers. *SB. Ak. Berlin* 1904, pp. 965-974, 13 text-figg.
319. SILVESTRI, A. Intorno ad una varietà della *Virgulina screibersiana* Czjczek. *Atti Acc. Pont. Lincei* lvii, pp. 22-27, 7 text-figg.
320. —. La forma microsferica della *Cyclammina cancellata*. *T. c.* pp. 180-185, 4 text-figg.
321. —. Forme nuove o poco conosciute di Protozoi miocenici piemontesi. *Atti Acc. Torino* xxxix, pp. 4-15, 7 text-figg.
Abstract in *J. R. Micr. Soc.* 1904, p. 313.
322. —. La *Sagrina nodosa* del Pliocene Senese. *Boll. Naturalista* xxiii, pp. 129-132, 2 text-figg.
323. —. Località Toscana del genere *Chapmania* Silv. et Prev. *Op. cit.* xxiv, pp. 117-119, 3 text-figg.
324. SKORIKOW, A. S. Ueber das Sommer-Plankton der Newa und aus einem Theile des Ladoga-Sees. *Biol. Centrbl.* xxiv, pp. 353-366, 385-391.

325. SMITH, J. C. A preliminary contribution to the Protozoan fauna of the Gulf Biologic Station, with notes on some rare species. 2nd Rep. Louisiana Gulf Biologic Station for 1903 (May, 1904), pp. 43-55.
Abstract in J. R. Micr. Soc. 1904, p. 537.
326. SNOW, J. W. The plankton Algæ of Lake Erie, with special reference to the Chlorophyceæ. Bull. U. S. Fish Comm. xxii, 1902 (publ. 1904), pp. 369-394, 4 pls.
327. SOULIÉ, H. Sur une Hémogregarine de *Psammodromus algirus*. C.R. Ac. Sci. cxxxix, pp. 371-373.
328. SOVINSKI, V. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante. Zapiski Kiev. Obshch. xviii, pp. i-xiii, 1-487, 1-216. [In Russian.]
Lists of Protozoa, pp. 4-29 (2nd pagination).
329. SPANDEL, E. Die Foraminiferen des Permo-Carbon von Hooser, Kansas, Nord-Amerika. Festschr. Ges. Nurnberg 1901, pp. 175-194, 10 text-figg.
330. SPITZNER, V. Foraminifery (dirkonosci) v tretihornich jilech v okoli Prostejova u Pteni a Cech. Vestnik. Klub. Prostejove vi, pp. 142-145. [List of Foraminifera.]
SPLENDRE, A. [See LUTZ & SPLENDRE (212).]
331. STANTON, T. W. Note on the Cretaceous Fossils. (In "The Geology and Ore deposits of the Bisbee Quadrangle, Arizona.") Prof. Pap. U. S. Geol. Surv. xxi, pp. 70-73, pl. 16.
332. STATKEWITSCH, P. Zur Methodik der biologischen Untersuchungen über die Protisten. Arch. Protistenk. v, pp. 17-40.
333. —. Galvanotropismus und Galvanotaxis der Ciliata. Zeitschr. allg. Physiol. iv, pp. 296-332, 14 text-figg.
334. DE STEFANI, C. Su alcuni terreni eocenici della Dalmazia. Rend. Acc. Lincei xiii, 2, pp. 567-571.
Occurrence of *Nummulitida*, and their value in determining strata.
335. DI STEFANO, G. Osservazioni geologiche nella Calabria settentrionale e nel Circondario di Rossano. Mem. Carta geol. Ital. ix (appendix), 1 pl. [Lists of Foraminifera occurring.]
336. TEMPELL, W. Ueber *Nosema anomalum* Monz. Arch. Protistenk. iv, pp. 1-42, pls. 1-3.
Abstract in Bull. Inst. Pasteur ii, p. 811.
337. —. Ueber die Entwicklung von *Nosema anomalum* Monz. (Vorläufige Mittheilung). Zool. Anz. xxvii, pp. 293-295, 5 text-figg. [Brief notice of (336).]
Abstract in J. R. Micr. Soc. 1904, p. 190.
338. STEPHENS, J. W. Sleeping-sickness. Nature lxix, pp. 345-347, 2 text-figg.
339. — & BOYCE, R. A parasitic disease in the haddock. Thompson Yates Lab. Rep. (5), ii, pp. 105-107, 2 pls. [Doubtfully of Protozoan nature.]
340. TEMPÈRE, J. Les Radiolaires, leur recherche et leur préparation. Microgr. prep. xii, pp. 109-113, pl. 14.
General account.

341. THEILER, A. Beitrag zur Frage der Immunität bei der Piroplasmose des Hundes. (Vorläufige Mittheilung.) Centrbl. Bakter. (1) xxxvii, Orig. pp. 401-405.
342. THIROUX, —. Sur un nouveau Trypanosome des Oiseaux. C.R. Ac. Sci. cxxxix, pp. 145-148, 5 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 769.
343. THOMAS, H. W. & LINTON, S. F. A comparison of the animal reactions of the Trypanosomes of Uganda and Congo Free State Sleeping-Sickness with those of *Trypanosoma gambiense* Dutton. Lancet 1904, i, pp. 1337-1340.
TODD, J. L. [See DUTTON, TODD & CHRISTY (89).]
344. TREUTLEIN, —. Demonstration tropischer Krankheitserregender Protozoen. SB. Ges. Würzburg 1904, pp. 66-69. [General notes on Trypanosomes.]
345. TYZZER, E. The etiology and pathology of Vaccinia. Stud. Path. Etiol. Variola 1904 (Office J. Med. Research, Boston), pp. 180-229, pl. 23-26.
346. UCKE, A. Beobachtungen über Flagellaten in Faeces des Menschen. Centrbl. Bakter. (1) xxxiv, Ref. p. 772.
Occurrence of *Trichomonas intestinalis* and *Megastoma entericum* in an encysted condition.
347. VALLÉE, — & PANISSET, —. Sur les rapports du Surra et de la Mbori. C.R. Ac. Sci. cxxxix, pp. 901 & 902.
348. *VENEZIANI, A. Ueber die physiologische Einwirkung des Radiums auf die *Opalina ranarum*. (Vorläufige Mittheilung.) Centrbl. Physiol. xviii, pp. 130-134.
349. VERDUN, —. Procédé de coloration de l'amibe de la dysenterie et des abcès tropicaux du foie. C.R. Soc. Biol. lvi, pp. 181-183.
[See II. G. 2.]
350. —. Sur quelques caractères spécifiques de l'amibe de la dysenterie et des abcès tropicaux du foie (*Amœba coli* Loesch). T. c. pp. 183-185.
Abstract (of both) in Bull. Inst. Pasteur ii, p. 293.
351. VERWORN, M. Die Lokalisation der Athmung in der Zelle. Denk. Ges. Jena (Festschr. Haeck.) xi, pp. 561-569.
352. WALLENGREN, H. Zur Kenntniss der Galvanotaxis. II. Eine Analyse der Galvanotaxis bei *Spirostomum*. Zeitschr. allg. Physiol. ii (1903), pp. 516-555, 14 text-figg.
353. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Denk. Ges. Jena (Festschr. Haeck.) xi, pp. 133-214, pl. 8, 21 text-figg.
Occurrence of fossil Foraminifera mentioned, p. 161.
354. WEIGELT, C. L'assainissement et le repeuplement des rivières. Mem. Cour. Ac. Belgique (8vo), lxiv, 1903, 668 pp., 128 text-figg.
[See II. B. 1, IV. A.]
355. WELCH, R. *Astrorhiza* on the Antrim Coast. Irish Natural. xiii, p. 27.
356. WESENBERG-LUND, C. Studier over de Danske Søers Plankton. (Special part.) Dansk. ferskvands-biologisk Lab. v, 1904, 223 pp., 8 charts, 10 photographic plates, 9 plankton tables. (Abstract in English, 44 pp.)

357. WEYSSE, A. W. A synoptic text-book of Zoology for colleges and schools. London and New York (Macmillan & Co.) 1904, pp. (xxx + 545), 425 text-figg. (Protozoa, pp. 19-50, 32 figg.)
358. —. *Amœbæ* for the Laboratory. Science, n. s. xx, p. 650.
[See II. G. 2.]
- WILLEY, A. [See CASTELLANI & WILLEY (63).]
359. —, CHALMERS, A. J. & PHILIP, W. M. Report on parasites in the carcasses of buffaloes at the Colombo slaughter house. Spolia Zeylan. ii, pp. 65-72, 2 figg.
[See IV. C. 2.]
360. WILSON, L. B. & CHOWNING, W. M. Studies in *Piroplasmosis hominis*. ("Spotted fever" or "Tick fever" of the Rocky Mountains.) J. infect. Diseases i, pp. 31-57, 2 pls.
Abstract in Bull. Inst. Pasteur ii, p. 258.
361. WOODCOCK, H. M. On Myxosporidia in Flat-Fish. P. Liverp. biol. Soc. xviii, pp. 126-142, pl. 2.
Abstracts in J. R. Micr. Soc. 1904, p. 661, and Bull. Inst. Pasteur ii, p. 427.
362. —. Note on a remarkable parasite of Plaice and Flounders. T. c. pp. 143-152, pl. 3.
Abstract in Bull. Inst. Pasteur ii, p. 426.
363. —. Notes on Sporozoa. 1. On *Klossiella muris* gen. et spec. nov., Smith and Johnson, 1902. Quart. J. Micr. Sci. xlviii, pp. 153-163, 2 text-figg.
Abstract in J. R. Micr. Soc. 1904, p. 660.
364. —. On *Cystobia irregularis* (Minch.) and allied "neogamous" Gregarines. (Preliminary note.) Arch. zool. exp. Notes (4) ii, pp. 125-128.
Abstracts in J. R. Micr. Soc. 1904, p. 536, and Bull. Inst. Pasteur ii, p. 904.
365. WORTH, H. R. The Foraminifera. Rep. Plymouth Inst. xiii (v), Trans. pp. 367-370 (1903). [Short popular account.]
366. —. Foraminifera. (In Plymouth Marine Invertebrate Fauna, pp. 155-298.) J. Mar. Biol. Ass. vii (ii), pp. 174-185.
367. WRIGHT, J. H. Protozoa in a case of tropical ulcer (Delhi sore). J. Med. Research, Boston x, 1903, pp. 472-482, 4 pls.
Abstracts in Centrbl. Bakter. (1) xxxv, Ref. p. 635 and Bull. Inst. Pasteur ii, p. 114.
- WURTZ, —. [See BRUMPT & WURTZ (51-53).]
- YUNG, —. [See D'ESPINE & YUNG (94).]
368. ZACHARIAS, O. Ueber die Komposition des Planktons in thüringischen, sächsischen und schlesischen Teichgewässern. Forschber. Plon xi, pp. 181-251, 7 text-figg.
Abstract in Zool. Zentrbl. xi, p. 175.
- ZEDERBAUER, E. [See BREHM & ZEDERBAUER (42).]
369. ZUELZER, M. Beiträge zur Kenntniss von *Diffugia urceolata* Carter. Arch. Protistenk. iv, pp. 240-295, pls. 10-12, 2 text-figg.
370. ZYKOFF, W. Ueber das Plankton des Flusses Seim. Zool. Anz. xxvii, pp. 214 & 215.
371. —. Das Plankton des Seliger Sees. T. c. pp. 388-394.

II. BIOLOGY.

A. MORPHOLOGY.

1. General Anatomy.

(a) *Gymnomyxa*:—

Description of *Chlamydomyxa montana*, PENARD (260).

Interesting new British Rhizopods described, CASH (60).

Detailed account of *Diffugia urceolata*, ZUELZER (369); general description of *Entameba buccalis* n. sp., PROWAZEK (279).

Microspheric form of *Cyclammina cancellata* described, SILVESTRI (320); note on a variety of *Virgulina screibersiana*, id. (319); description of *Triticites*, a new genus of Foraminifera, GIRT (120).

General account of the morphology of the Heliozoa, PENARD (262).

Full account of the structure of the *Aulacanthidae*, IMMERMANN (148); of the *Acanthometrea*, POPOFSKY (270).

Note on the anatomy of *Gazelletta*, FOWLER (113).

(b) *Sporozoa*:—

Short account of new Sporozoa, *Gregarina marteli*, *Diplocystis clerci* and *Adelea transita*, LÉGER (189).

General description of: the form and structure of Gregarines, LÜHE (209); *Gregarina ovata*, PAEHLER (256); the trophozoites of *Urospora lagidis*, BRASIL (41).

Preliminary note on "neogamy" or precocious association in Gregarines (*Cystobia* and *Diplocystis*), WOODCOCK (364).

Short account of a new Coccidian, *Angeiocystis audouinii*, BRASIL (40).

Short account of: a new Hæmogregarine, *Hæmocystidium*, CASTELLANI & WILLEY (63); several new Hæmogregarines, BILLET (21-24), DUCLOUX (88) & NICOLLE (247-249); *Hæmogregarina mauritanica* n. sp., from a land tortoise, SERGENT (314).

Notes on: the parasite of tropical splenomegaly, Kala-Azar, etc. (*Piroplasma donovani*), BENTLEY (16), CHRISTOPHERS (74 & 75), DONOVAN (83) and LAVERAN & MESNIL (173); the Protozoan parasite (allied to *Piroplasma donovani*) causing Delhi boil, etc. in man, MESNIL, NICOLLE & REMLINGER (235), & WRIGHT (367).

Account of: *Thelohania legeri* n. sp., HESSE (140); *T. mænadis* n. sp., PÉREZ (263).

Description of a new type of Actinomyxidæ, *Sphaeractinomyxon stolci*, CAULLERY & MESNIL (64).

Further notes on *Joyeuxella toxoides*, BRASIL (41).

Note on a remarkable Sporozoan parasite, *Lymphocystis johnstonei* n. g., n. sp., WOODCOCK (362).

(c) *Mastigophora*:—

Full account of: the morphology and form-variety of *Trypanosoma* (*Halteridium*) *noctuae*, and *Spirochæta* ("*Hæmamæba*," "Leucocytozoon") *ziemanni*, SCHAUDINN (301); certain parasitic Flagellates (*Trichomastix lacertæ*, *Bodo lacertæ*, and *Trichomonas lacertæ* n. sp.), PROWAZEK (278); *Herpetomonas muscæ-domesticæ*, id. (277).

Description of *H. subulata* n. sp., monadiform and gregariniform phases, LÉGER (186); *Trypanophis* (n. g. for *Trypanosoma grobbeni*), a very interesting form, KEYSSELITZ (156).

Important redescription of the morphology of *Trypanoplasma borreli*, LÉGER (180).

Account of: a new avian Trypanosome, *Trypanosoma paddæ*, LAVERAN & MESNIL (176) & THIROUX (342); new piscine ones, *T. abramis*, *T. danielowskyi* and *T. tinæ*, LAVERAN & MESNIL (176); *T. inopinatum* n. sp.,

from the green frog, differing greatly from the Amphibian type, SERGENT (313); *T. nelspruitense* n. sp., LAVERAN (171); *T. barbatula* n. sp., and *Trypanoplasma varium* n. sp., LÉGER (184 & 185).

Different forms of *T. dimorphon* Dutton & Todd, described, LAVERAN & MESNIL (174); notes on *T. equiperdum* of Dourine, LINGARD (204).

Reasons for considering the non-flagellate end of a Trypanosome the anterior one, GUIART (129).

Description of *Joenia annectens*, GRASSI & FOA (126).

Brief account of a new Flagellate, *Ocyglossa velox*, of remarkable body-form, GIARD (116).

(d) Ciliophora:—

General description of: two new Infusoria, *Anoplophrya brasili* and *Opalina saturnalis*, LÉGER & DUBOSCQ (193, brief account) & (194 & 195); the parasitic Infusoria *Discophrya gigantea* and *Opalina intestinalis*, COHN (77); *Anophrys echini* n. sp., DI MAURO (231); new *Opercularia*, FAURÉ (105); a new colony-forming Infusorian, *Opercularia clepsinis*, POPOW (271).

Account of a new Suctorian, *Astrophrya arenaria* n. g., n. sp., AVERINTZEV (6).

2. Minute structure of cell-organs.

(a) Membrane, test, shell:—

Structure of the test of *Diffugia urceolata*, ZUELZER (369).

Note on the structure of the shells of porcellaneous Foraminifera, CHAPMAN (68).—Structural characters of the shell of floating Foraminifera, and its adaptation to this mode of life, KEMNA (155).

On the chemical nature of the so-called acanthin skeleton of the *Acanthometrea*, SCHEWIAKOFF (303).

Double nature of the envelope around *Hæmogregarina tunisiensis* in the encysted endoglobular condition, BILLET (21).

Nature of the enveloping shell or "house" in the *Vaginicolinæ*, FAURÉ (104).

Arenaceous "house" of *Astrophrya*, a new Suctorian, AVERINTZEV (6).

(b) Nucleus and cytoplasm:—

Minute description of the cytological appearances and changes occurring during "alteration" and physiological degeneration in *Actinosphaerium*, HERTWIG (138).

Cytological details in *Dicercomonas muris*, FOA (109).—Details of cytological structure in *Trypanoplasma borreli*, LÉGER (181).—Minute structure of *Anoplophrya brasili* and *Opalina saturnalis*, LÉGER & DUBOSCQ (194 & 195).

Minute structure of karyoplasm and cytoplasm of *Vorticellidæ*; proteid spherules ("tonoplasts") in endoplasm; ultimate nature of the cytoplasm, FAURÉ (96); further remarks on the nature and function of the tonoplasts in Ciliates, id. (97).

Minute structure of nucleus and cytoplasm in Gregarines; comparative account, LÜHE (209).—Nucleus and cytoplasm in *Gregarina ovata*, PAEHLER (256).—Occurrence of large irregular vegetative nuclei in the cysts of *Glugea anomala*, STEMPEL (336).

Nuclear structure and changes in a Trypanosome of the rabbit, Bosc (34). [The Rec. is sceptical about many of the appearances depicted, which are perhaps artifacts. The author's figg. are very unconvincing.]

Nuclear structure of *Discophrya gigantea* and *Opalina intestinalis*, COHN (77).—Nuclear apparatus of *Paramecium*, MITROPHANOW (239); changes in same, CHAINSKY (67) & PETSCHENKO (267).

On the chromidia and chromidial apparatus of various Protozoa in relation to the nucleus, GOLDSCHMIDT (123).

Occurrence of nuclear changes in *Opalina ranarum* which are thought to represent the differentiation of a micro- (or sexual) nucleus, LOEWENTHAL (206).

Well-differentiated ectoplasmic layer in *Trypanophis*; little ectoplasmic cap and beak at the anterior end, KEYSSELITZ (156).

Structure and formation of the trichocysts in *Paramæcium*, MITROPHANOW (239).

On the discharge of the contractile vacuole in *Amæba terricola*, PENARD (261).—The excretory canals of *Discophrya*, COHN (77).

On the hydrostatic apparatus of the *Acanthometrea*, SCHEWIAKOFF (303).

Plastogamy in *Diffugia urceolata*; detailed account of the chromidial substance in this form, ZÜLZER (369).

(c) Organs of attachment and movement:—

Structure of the filamentous pseudopodia of *Chlamydomyxa montana*; distinction of the "travelling corpuscles" from the nuclei, PENARD (260).

Cuticular striations, muscle-fibrillæ, etc., in *Gregarina ovata*, PAEHLER (256).

The basal corpuscles of Infusoria (*Paramæcium*, *Carchesium*) are of mechanical importance as points of insertion or attachment of the vibratile organellæ, MITROPHANOW (238).

Structural details of the peristome and ciliary apparatus in *Tintinnus*, SHVEIER (316).

Intimate structure of the contractile and fixative apparatus of various Vorticellids, FAURÉ (95, 98, 99 & 101). In its highest development (*Vorticella* and *Carchesium*) the peduncle consists of a basal portion or "scopula," an external elastic sheath, and a central contractile axis; the latter is again differentiated into a central "spasmonema" of united myonemes, and an outer plasmic cord.

On the elastic thread in the stalk of *Vorticella*, BRANDES (39).

B. PHYSIOLOGY.

1. Nutrition, excretion, osmosis, etc.

On the rôle played by Protozoa in the purification of rivers, by feeding on organic material, Bacteria, etc., WEIGELT (354).

Prolonged functional activity and metabolic interchange in *Actinosphaerium*, brings on "depression" and ultimately physiological degeneration; analogy between the cellular reactions in such a case, and those resulting in malignant growths in Metazoa, HERTWIG (138).

Relations between general metabolism and the process of division in *Stentor*, and the different liquids (solutions of salts, infusions, etc.) in which the animals were maintained, PETERS (265).

Hunger-periods associated with conjugation in *Dileptus*, HERTWIG (139).

The trichocysts of *Paramæcium* function as an excretory apparatus, MITROPHANOW (239).

Investigations on *Spirostomum* lead to the conclusion that respiration goes on only in the cytoplasmic constituent of the cell, and not in the nucleus, VERWORN (351).

Adipogenic function in *Vorticella convallaria*; associated production of a pigment (lipochrome?) and abundant fat grains, and subsequent expulsion "en masse"; epidemic occurrence of this "*V. citrina*"-phase, FAURÉ (102).

2. Locomotion.

Remarks on the movement of Gregarines, LÜHE (209).

Locomotion in *Ocyglossa*, a new Flagellate, is principally by the con-

traction of a median, tongue-like, posterior prolongation of the body, GIARD (116).

Considerations with regard to the movement of *Trypanophis*, KEYSSELITZ (156).

3. Response to stimuli; effect of reagents.

Physiological experiments on *Trypanosoma brucei* and *T. equinum*; action of warmth, disinfectants, conservation-media, etc. on the parasites, JAKIMOFF (150).

Vitality of *T. granulosum* in human and other sera; destructive effect of water and other hypotonic liquids on the parasites, SABRAZES & MURATET (296).

Human serum has a slight action on the *T.* of horses in Gambia (*T. dimorphon*) but none on the human parasite (*T. gambiense*); arsenic acid exerts some influence on the latter, however, LAVERAN (164).

"Trypanoth" has little or no permanent effect on Trypanosomes, especially on *T. gambiense*, LAVERAN (166).

Cytoplasmic reactions of *Paramæcium* (as indicated by staining propensity) to chemotactic influences, BARRATT (10); effects of acids and bases on *P.*, id. (11).

Relation of the physical structure of the protoplasm in *Paramæcium* to the reactions of the organism towards thermal, chemical and electrical stimuli, GREELEY (127).

Effects of chemical and electrical stimuli on the myonemes of the hydrostatic apparatus in the *Acanthometrea*, SCHEWIAKOFF (303).

"Galvanotropism" (movement, or change in direction of movement, induced by electric current) and "galvanotaxis" (change of position, axial direction) in various Infusoria, STATKEWITSCH (333).

Galvanotaxis in *Spirostomum*; reactions of the Infusorian towards electric currents of different strengths, WALLENGREN (352).

Physiological effects of radium on various Protozoa (*Amæba*, *Nassula*, *Trypanosoma*), SALOMONSEN & DREYER (297).—Action of radium on *Opalina ranarum*, VENEZIANI (348).

Action of light-rays (mostly chemical) on Infusoria (*Paramæcium* and *Colpidium*), HERTEL (137).—The significance of pigment in light-perception by the Protozoan cell, HALBEN (133).

C. BIONOMICS.

1. Plankton.

Protozoan plankton (mostly Peridinida) collected in the North Atlantic (57°–60°), OSTENFELD & PAULSEN (255).—Atlantic plankton, *Tripylaria*, many n. spp., BORGERT (28).—Plankton distribution in the Atlantic: of the *Aulacanthida*, IMMERMANN (148); of the *Acanthometrea*, POPOFSKY (270).

Abundant occurrence of *Noctiluca miliaris*, forming a great shoal, off the Scilly Isles, BROWNE (45).—Tay Basin, Protozoan plankton occurring, mostly Peridinida, MURRAY (245 & 246).

Dinoflagellate plankton from Iceland, PAULSEN (258).—In plankton from North Sea and Skagerack, two new marine species of Heliozoa, OSTENFELD (254).—Protozoan plankton of Danish seas, WESENBERG-LUND (356).

Plankton from Ausgraben lakelets near Plön (Dinoflagellates), LEMMERMANN (198).—Protozoan plankton from various ponds and lakelets in Thuringia, Saxony, and elsewhere, ZACHARIAS (368).—*Ceratium hirundinella* in plankton, Alpine lakelets, BREHM & ZEDERBAUER (42).

Radiolarian plankton, Gulf of Capri, LO BIANCO (205).

Plankton from Quarnero (Hungary), chiefly Tintinnids, ENTZ (93).

Protozoan plankton from : river Seim (tributary of the Dnieper), ZYKOFF (370) ; Lake Selig (Gov. Twer), id. (371) ; the Neva and Lake Ladoga, SKORIKOW (324).

In plankton from the Volga (Woloshka), *Astrophrya*, a new Suctorian, AVERINTZEV (6).

Plankton from : Turkestan, Protozoa, listed, v. DADAY (79) ; River Murgab (Merv, Turkestan), Protozoa, MEISSNER (233).

Protozoan plankton collected on a voyage to and from Bombay, CLEVE (76).

In plankton, Lake Erie, a new *Chlamydomonas*, SNOW (326).

2. Parasitism, effects on host : relation to disease.

[For infection, transmission, see II. G. 1 ; and for hosts, III. c.]

Biological peculiarity of *Chlamydomyxa montana*. This organism, though itself no longer actually parasitic or saprophytic, always occurs in the putrid liquid around decaying and half-decomposed *Hypnum*-moss. PENARD (260) looks upon this habitat as reminiscent of an ancestral parasitic or saprophytic one.

Destruction of nucleus in *Amæba* by fungal parasite, GRUBER (128).

Gregarinosis:—

Relations between growing Gregarines and the intestinal host-cells, LÉGER & DUBOSCQ (192).

Relations between *Urospora lagidis*, in the trophic and sporulating phases, and the cœlomic phagocytes of its host, *Audouinia* ; healthy parasites appear quite uninjured by the phagocytes, BRASIL (41).

Coccidiosis:—

Harmful effects of *Diplocystis clerci* on its host, when strongly infected, LÉGER (189).—Attachment of *Doliocystis pellucida* to its intestinal host-cell, BRASIL (41).

Haemosporidiosis:—

Karyolysis of the blood-corpuscles brought about by *Hæmogregarina viperini* and *H. sergentium*, BILLET (22) & NICOLLE (248) ; relation of *H. curvirostris* to the nucleus of the corpuscle, BILLET (24).

The occurrence of paranuclear corpuscles in the hæmatids of tortoises infected with *Hæmogregarina* perhaps stands in relation with the presence of these parasites, even though not all the hæmatids exhibiting this karyolysis are actually parasitized, BILLET (25).

Piroplasmosis:—

The different piroplasmoses of cattle, with figures of the parasites (unspecified), DSCHUNKOWSKY & LUHS (86).

Canine piroplasmosis, general account, GALLI-VALERIO (115).—A study of canine piroplasmosis and the tick which conveys the disease, BOWHILL & LE DOUX (38), also NUTTALL (252).—On the immunization of dogs against *Piroplasma canis*, THEILER (341).

Can *Piroplasma bigeminum* live in the human blood ? Difficulty of distinguishing certain forms of this parasite from certain of those exhibited by the parasite of benign tertian malaria, LINGARD (203).

Good figures showing the relation of *Piroplasma donovani* to the leucocytes and blood-corpuscles are given by DONOVAN (83).—Minute forms of *P. d.*, free or endoglobular, in the peripheral circulation, LAVERAN & MESNIL (173).

“Leishman-Donovan” bodies (*Piroplasma donovani*) in persons suffering from tropical splenomegaly ; their relation to the splenic cells and leucocytes of the host ; nature of the “matrix” ; comparison with other *Piroplasmata* and involution forms of Trypanosomes, CASTELLANI (61), CHRISTOPHERS

(73-75), LEISHMAN (196), MANSON & LOW (219 & 220), and MARCHAND & LEDINGHAM (223).

Kala-Azar, general account of the disease and its parasite, RUATA (293).

Delhi boil, "bouton d'Alep," and like maladies caused by a Protozoan parasite ("*Helcosoma*" *tropicum*, WRIGHT [367]); this parasite is almost certainly a *Piroplasma*, and closely allied to *P. donovani*, MESNIL, NICOLLE & REMLINGER (235).

Account of "spotted fever" or "tick-fever" of the Rockies; a true human piroplasmosis caused by *P. hominis* n. sp., WILSON & CHOWNING (360).

Trypanosomosis:—(BLANCHARD (27) maintains that the term *trypanosomosis* is the correct one to use for diseases due to Trypanosomes, for the following reasons:—(a) it has priority over all others, having been proposed by BRUMPT, 1901; (b) it is pure and not a latinized hybrid like *trypanosomiasis*; (c) it agrees with the nomenclature of all other Protozoan diseases. [The Recorder lays stress on this point, which he has consistently supported.]

Sleeping-sickness and other trypanosomoses (general review), d'ESPINE & YUNG (94).—Trypanosomes and sleeping-sickness, BRODEN (43 & 44), HODGES (142), and SAMBON (298).—Sleeping sickness, its parasite and transmissive agent, STEPHENS (338).—Human trypanosomosis; general account of the parasite, its relation to others, and the course of the disease, RUATA (292).—Trypanosomoses (including sleeping-sickness) and tse-tse flies, BLANCHARD (27).

Sleeping-sickness experimentally produced in many animals (e.g. mice, rats, guinea-pigs, rabbits, dogs, monkeys); the behaviour of the trypanosomes and their effect upon the hosts agrees with the observations of Dutton & Todd on the parasite of *T.*-fever; hence one and the same Trypanosome is concerned in both cases, BRUMPT & WURTZ (51-53).—Essentially similar pathogenic behaviour of *T. gambiense* Dutton and *T. ugandense* Castellani, LAVERAN (165).—The Trypanosome of sleeping-sickness in Uganda and Congo Free State identical with *T. gambiense*, DUTTON, TODD & CHRISTY (89), also THOMAS & LINTON (343).

The trypanosomosis known as Aino, occurring in Somaliland (Ogaden) is, BRUMPT (47) thinks, probably the same as Nagana.—A trypanosomosis of Dromedaries in Algeria allied to Mbori (Timbuctoo); effects of the parasites on different animals, SERGENT (311 & 312).—Trypanosomoses in French West Africa, LAVERAN (168).—Existence of an equine trypanosomosis (probably a distinct variety) in French Guinea, id. (169).—A trypanosomosis among cattle, horses, mules, donkeys in Mauritius, EDINGTON (91).—Trypanosomosis in a rabbit, PETRIE (266).

The trypanosomes of Surra and Mbori appear to be identical and animals immunized against the one disease are immune to the other, VALLÉE & PANISSET (347).

Nagana-infection (*T. brucei*) in the guinea-pig, MARKL (225).—Nagana and *T. brucei*, full account of, SCHILLING (304).

Infection of rats and mice with *T. equiperdum* of Dourine; remarks on Algerian trypanosomoses, ROUGET (291).—The lesions of Dourine and the relation of the parasite (*T. equiperdum*) to them, LINGARD (204).

Effects of *T. dimorphon* on horses, LAVERAN & MESNIL (174).

T. theileri (?) in cattle in German East Africa, PANSE (257).

Immunity of *Cynocephalidae* against various trypanosomoses; activity of their serum on the parasites, LAVERAN (167).

Detailed account of the relation between *Trypanosoma noctuae* and the cells and tissues of its hosts, both Avian and Insectan; endoglobular phases; also for *Spirochaeta ziemanni*, SCHAUDINN (301).—*T. inopinatum* certainly penetrates the red blood corpuscles of the frog, becoming endo-

globular, BILLET (26).—Observations pointing to an endoglobular phase in the life-history of a Trypanosome (not unlike *Piriplasma donovani*), MOORE (243).

Myxosporidiosis:—

Thelohania mænadis does not appear to injure to any extent the infected *Carcinus*, though the host's muscles may be infested with it, PEREZ (263).

Severe epidemics of "Drehkrankheit" (characterized by spasmodic irregular movement) in young rainbow-trout, due to *Lentospora cerebralis*; relation of the parasites to the host's tissue [see also III. c.], PLEHN (269).

Relation between the host's tissue and the parasitic invasion in the case of *Glugea stephani*; "pseudocysts" the result of a condition of diffuse infiltration, WOODCOCK (361).

Protozoa and other diseases:—

The development of the Amœba of tropical dysentery (*Entamœba histolytica*) shews that it is distinct from *E. coli*, LESAGE (202).—*Amœba coli* and its relation to so-called tropical dysentery and hepatic abscess, VERDUN (350).—Amœbic dysentery in Ceylon, CASTELLANI (62).

Cysts of *Trichomonas intestinalis* and *Megastoma entericum* in human faeces, UCKE (346).

Cytoryctes variolæ certainly seems to be the cause of small-pox; relation of the parasite to the cells and nuclei of the lesions in this disease fully described, CALKINS (58).—The "vaccine" bodies are phases of an organism very closely allied to *Cytoryctes variolæ* if not identical; the difference between the effects in the two cases (small-pox and vaccinia) is apparently due to the fact that in the latter the parasite does not become intranuclear, TYZZER (345).

Inoculation of Monkeys (*Rhesus* and *Macacus*) with small-pox virus; occurrence of different forms of the parasite (*Cytoryctes*) which are described, MAGRATH & BRINCKERHOFF (218).

Photomicrographs of the small-pox parasite, shewing its relation to the cells and nuclei, COUNCILMAN, MAGRATH & BRINCKERHOFF (78).

The supposed Protozoan parasite of vaccinia (cow-pox and horse-pox)—[most unsuitably termed "*Plasmodium*" *vaccine*]—and its relation to the malady discussed, BOSC (32 & 33).

DE KORTÉ (161) describes what he considers as the Protozoan parasite of small-pox and vaccinia, terming it "*Amœba variolæ*."

SIEGEL (318) considers the cause of vaccinia to be a peculiar spore-forming parasite of Sporozoan affinity, readily found in the kidney-tissue.

BOSC (29-31) maintains the parasitic nature of the inclusions in cancerous cells, regarding them as Protozoa. He compares these organisms [?] with the bodies he has found in "clavelée," small-pox, vaccinia, etc.

SCHÜBERG (308) points out that Feinberg [Zool. Rec. 1903 (109)] has mistaken for "intestinal cysts filled with Coccidia" what are really *Cysticerci* of a tape-worm! It would follow, therefore, that much reliance cannot be placed upon the Protozoan nature of his cancer-inclusions.

The "one and only true cancer parasite" has again revealed itself, this time to SCHÜLLER (310), who regards it as a Protozoan and gives numerous unconvincing figures of it.

According to LUZZANTI (214) a Protozoan parasite has been observed in a case of hydrophobia, and is considered to be the cause.

D. REPRODUCTION.

Comparative review of the different modes of reproduction in the Protozoa, and their classification, HARTMANN (135).

1. Asexual: fission, schizogony, etc.

Schizogony in *Adelea transita* n. sp., LÉGER (189).—Schizogony of *Klossiella* described and compared with that of *Caryotropha mesnili*, WOODCOCK (363).

Schizogony of: *Hæmogregarina bivertorta*, NICOLLE (249); *H. mauritanica* n. sp., 8 merozoites being formed, SERGENT (314).

Meronts and merogony in *Thelohania legeri*, HESSE (141).—Schizogonous multiplication in *T. menadis* n. sp., PEREZ (263).

Asexual multiplication (binary fission and multiple rosette-formation) in *Herpetomonas muscae-domesticae*, PROWAZEK (277).—Multiplication by longitudinal fission of *H. subulata*, LÉGER (186).—Process of division described: in *Joenia annectens*, GRASSI & FOA (126); in *Trichonympha agilis*, FOA (110).—Multiplication of *Trypanosoma granulorum* by unequal division, SABRAZÈS & MURATET (295).

Fission in *Anophrys echini* n. sp., DI MAURO (231).—Division in *Discophrya* and *Opalina intestinalis*, COHN (77).

2. Sexual: gametes and conjugation.

On the general significance of conjugation, CALKINS (56).—Notes on conjugation ("exogamy") in certain Protozoa, HARTOG (136).

"Association" and conjugation in *Diffugia urceolata*, ZÜTZER (369).—Evidences pointing to sexual (*Pelomyxa*-) forms in the life-history of *Amœba proteus*, CALKINS (57).

Formation of gametes (sporoblasts) in *Gregarina ovata*, PAEHLER (256).—Markedly anisogamous conjugation in *Stylorhynchus*; certain very motile, spermatozoon-like, male elements are sterile and have acquired a subsidiary function, LÉGER (188).

Two types of form (micro- and megagametocytes?) and multiplication (micro- and megagamete-formation?) in *Joyeuxella*, BRASIL (41). [These two types of multiplication seem to the Recorder to possess a certain agreement with what occurs in *Schaudinnella* (Nusbaum, Zool. Rec. 1903 [282]) and suggest that the affinities of *J.* may be sought in that direction.]

Micro- and megagametocytes in *Adelea transita*, LÉGER (189); (association observed but not actual gamete-formation).—Micro- and megagametocytes and microgametes of *Angeiocystis*, a new Coccidian, described, BRASIL (40).

Distinction of male and female forms (gametocytes) in "*Leucocytozoon*" *danilevskyi*, BERESTNEFF (18).

Important account of the sexual process in certain parasitic Flagellates; autogamy (or self-fertilization) in *Trichomastix*, and heterogamy (true sexual conjugation) as well as autogamy in *Bodo*; comparison with the heterogamy of *Trichomonas*, PROWAZEK (278).—Sexual processes (fertilization, "etho-genesis" or male autogamy, and parthenogenesis) in *Herpetomonas muscae-domesticae*, id. (277).

True conjugation in *Trypanosoma noctuae* and *Spirochaeta ziemanni*, taking place in the gnat, described, SCHAUDINN (301).

Note on conjugation in *Dileptus gigas*, HERTWIG (139).—Conjugation in *Paramœcium bursaria* described, HAMBURGER (134).

3. Nuclear division: directive centres, etc.

Description of nuclear division in *Amœba proteus*, AVERINTZEV (7).—Nuclear changes, fragmentation, and the significance of the multinucleate condition in *Amœba proteus*, CALKINS (57).—Behaviour of the nuclei and chromidial substance during conjugation and also during encystment in *Diffugia urceolata*, ZÜTZER (369).

Nuclear changes during sporoblast-formation in *Gregarina ovata*; curious "maturation" process, PAEHLER (256).—Nuclear changes and multiplication during sexual reproduction in *Stylorhynchus*; the nuclei are dis-

tinguishable into somatic and germinal (sexual) nuclei, the former of which take no part in gamete-formation; karyokinetic division, LÉGER (188).—Nuclear multiplication in sporulating cysts of *Urospora*, BRASIL (41).

Nuclear multiplication and behaviour of the chromatin in *Thelohania mænadis*, PEREZ (263).

Nuclear behaviour during the various phases of the life-history of *Herpetomonas muscae-domestice*, PROWAZEK (277).—Nuclear differentiation, reduction, and fission in *Trichomastix* and *Bodo*, PROWAZEK (278).

Nuclear complexity and differentiation in *Trypanosoma noctuæ* and *Spirochaeta ziemanni*; the so-called "blepharoplast" is more than a centrosome—a kinetic nucleus of equal functional importance with the larger or trophic nucleus, SCHAUDINN (301).

Nuclear changes during conjugation in *Opalina intestinalis*; comparison in this respect with other ciliates, COHN (77).—Nuclear multiplication in *O. saturnalis*, LÉGER & DUBOSCQ (194).—Nuclear maturation or purification during division in *Opercularia stenostoma* associated with "recuperation," FAURÉ (103).

E. DEVELOPMENT; LIFE-CYCLE.

Encystment, and formation of little flagellate embryos, in *Chlamydomyxa montana*, PENARD (260).

Encystment in *Diffugia urceolata* follows after conjugation; it is not merely protective or for resting-purposes, but plays an important part in further development, ZÜTZER (369).

Development and growth of various intestinal Gregarines of Tracheates; different types of development, LÉGER & DUBOSCQ (192).—Comprehensive comparative account of the growth and development of Gregarines from the sporozoite-stage, LÜHE (209).

Cysts and spores of *Diplocystis clerici* n. sp., LÉGER (189).—Development and growth of the young individuals in *Gregarina ovata* from sporozoites, PAEHLER (256).—Spores and sporozoites of *Urospora lugidis*, BRASIL (41).

Development of oocysts and spores in *Adelea transita*, LÉGER (189).—Oocysts, spores, and sporozoites of *Angeiocystis* n. g., BRASIL (40).

Ookinete of *Hemogregarina bagensis* observed in *Placobdella catenigera* with two nuclear bodies, one much resembling the "centrosome" of a Trypanosome, BRUMPT (48).

Development of the different forms of *Trypanosoma noctuæ* and *Spirochaeta ziemanni* from different types of ookinete; complex life-history, a true Hæmosporidian (*Halteridium*) phase alternating with the Trypanosome phase, SCHAUDINN (301).

Further evolution of *Trypanosoma barbatulæ* in *Piscicola*, along the lines revealed by Schaudinn, and, similarly, of *Trypanoplasma varium* in *Hemiclepsis*, described by LÉGER (184 & 185).

Evidence pointing to ontogenetic relationship between *T. inopinatum* and a *Drepanidium* of the green frog, which probably both represent phases in one complete life-cycle; forms transitional between "sporozoites" [probably merozoites] and *Spirochaeta*-like Trypanosomes, BILLET (26).—Important experiments tending to prove that the *Trypanosoma*, in a leech, gives rise to the *Drepanidium*, in the frog, id. (20).

Development of a flagellate (Trypanosome) phase in the splenic parasites of Kala-azar (*Piroplasma donovani*), ROGERS (286).

Notes on pansporoblasts and spores of various *Microsporidia*, LUTZ & SPLENDRE (213).—Development and growth of the cyst, "sporonts" [pansporoblasts] and spores in *Glugea anomala*, STEMPELL (336).—Cysts and spores of *G. stephani*, WOODCOCK (361).—Sporonts and development of spores in *Thelohania legeri*, HESSE (141).

Formation and development of the cyst, spores, and sporozoites in

Sphaeractinomyxon n. g., CAULLERY & MESNIL (64); in *Triactinomyxon* LÉGER (182).

Detailed account of the complicated life-history of *Cytoryctes variolæ*, CALKINS (58).

Cyst-formation, development, and life-history of *Herpetomonas muscæ-domestice*, PROWAZEK (277).—Life-cycle of *Trichomastix* and *Bodo lacertæ* (particularly complex in this form) described, id. (278).

Varieties of encystment in the *Opalina*, LÉGER & DUBOSCQ (193 & 195).

F. GROUP RELATIONSHIPS; CLASSIFICATORY CHANGES.

Chlamydomyxa is to be placed in the Mycetozoa, being probably allied to the *Mycetozoidæ* (*Euplasmodiæ*), PENARD (260).

POPOFSKY (270) considerably amplifies the classification of the *Acanthometrea*, introducing especially several new families and sub-genera.

Relationship of the Actinomyxidina to the Myxosporidia, CAULLERY & MESNIL (65) & LÉGER (183).

CALKINS (58) creates the family *Cytoryctidæ* for *Cytoryctes*, *Caryoryctes* n. g., and *Lymphosporidium*, which he places in the sub-order *Microsporidia*, though with reservations. [The Recorder fails to see much resemblance between these forms and a typical Microsporidian. Considering, for one thing, the very different character of the nucleus (of the "distributed" type in his family), it seems much better to leave these forms in the Serosporidia, where, indeed, *Lymphosporidium* has been hitherto placed.]

On the affinities of *Trypanoplasma* and *Trypanosoma* and the derivation of the latter, LÉGER (181).

Affinities of Trypanosomes with the flagellum morphologically anterior (type *T. noctuæ*, after Schaudinn) with Herpetomonads, LÉGER (187).

The *Astomata* so-called do not represent a natural group; the *Opalina* are very different from the other members and should be placed in a distinct family, LÉGER & DUBOSCQ (193).

Basing his views on a comparative study of the fixative apparatus of *Vorticellidæ*, FAURÉ (100) derives the Discotricha (or Peritricha) directly from the Holotricha, through forms like *Scyphidia* and *Hemispeira*, which are to be regarded as primitive. This has more in its favour than a Hypotrichous origin through the *Urceolaridæ*.

G. MISCELLANEA.

1. Cultivation and infection.

Artificial cultivation of the Amœba of tropical dysentery, LESAGE (202).

On the artificial cultivation of Trypanosomes, ANON. (4); on the artificial cultivation of *Trypanosoma brucei*, NOVY & MCNEAL (251).

Culture media for Infusoria, STATKEWITSCH (332).

Piroplasma hominis is conveyed by a tick, *Dermacentor reticulatus*, WILSON & CHOWNING (360).

Transmission of *Trypanosoma noctuæ* and *Spirochaeta ziemanni* by the gnat *Culex*, which is a true alternate host; hereditary infection of the same, SCHAUDINN (301).

After his investigations on leeches as the alternate hosts of piscine Trypanosomes and Hæmogregarines, BRUMPT (49) is fully convinced that the *Glossina* are true alternate hosts of mammalian Trypanosomes.

White rats found naturally infected with *T. lewisi*; infection undoubtedly conveyed by fleas or lice, LAVERAN & MESNIL (175).

Probably a mosquito transmits *Trypanosoma equinum* from the native host (*Hydrochærus*) to domestic animals, at the hour of drinking, ELMASSIAN & MIGONE (92).

In *Hemiclepsis marginata* infected with Trypanosomes, the ova and embryos are not parasitized. Hence BRUMPT (48) concludes that hereditary infection does not occur in this case.

Hereditary (ovarian) infection of the common house-fly with *Herpetomonas muscæ-domestica*, PROWAZEK (277).

2. Technique.

Description of Steenstrup's apparatus for collecting plankton, OSTENFELD & PAULSEN (255).

On a method of obtaining *Amæbæ* for the laboratory, WEYSSE (358).

On the preparation of Foraminifera, MARPMANN (226).—On a method of taking internal casts of Foraminifera, QUILTER (280).

Effect of media of different consistency in hindering and limiting the movement of Infusoria, STATKEWITSCH (332).

On a method of fixing Infusoria (*Vorticella*, *Carchesium*) nicely expanded, DE BEAUCHAMP (15).

A method of demonstrating the external discharge of the contractile vacuole in *Paramæcium* and other Infusorians, JENNINGS (151).

On the "neutrophile" staining character of Protozoan nuclei, MARINO (224).

Laveran's Borrel-blue method used as a stain for dysenteric *Amæbæ*, VERDUN (349).—Simplification and improvement of his methylene-blue-eosin stain for Hematozoa, GEMS (117).—On a modification of Romanowsky's stain which will stain Trypanosomes, etc., in sections, LEISHMAN (197).

3. Bibliography, etc.

Protozoan bibliography for 1903, with abstracts of several papers, MAYER (232).

List of Protozoan literature for 1904 (1st part), SCHAUDINN (302).

Protozoan bibliography for 1901, ANON. (1).

Useful bibliography of the Gregarines, LÜHE (209).

Changes in nomenclature for the different types of Protozoan reproduction suggested, HARTMANN (135).

ROSS & BOYCE (290) maintain that Forde and Dutton first discovered the human Trypanosome.

III. DISTRIBUTION.

A. GEOGRAPHICAL.

Distribution (geographical and bathymetrical) of the *Tripylaria* found by the German Deep-Sea Expedition ("Valdivia"), HÄCKER (132).

Europe:—England (Cheshire and Essex), new Rhizopods, CASH (60).

Plymouth Sound and neighbourhood, list of Foraminifera occurring in, WORTH (366).

Lough Larne district, Foraminifera from, including *Bulima elongata* new to British seas, GOUGH (124).

Coast of Antrim, off Rathlin Island, an unusually large specimen of *Astrorhiza*, WELCH (355).

Belgian coast, Foraminifera, GILSON (118).

Ambleteuse (Pas-de-Calais), from diatomaceous sand, *Ocyglossa velox*, a new Flagellate, GIARD (116).

Lagos, and Southern Portugal, marine Foraminifera from, NOBRE (250).

Lake of Geneva and neighbourhood, new Rhizopods, PENARD (259); Heliozoa, id. (262).

Various Italian Alpine lakelets, Protozoa from, MONTI (242).
Coast around Delos (Grecian Archipelago), Foraminifera, SIDEBOTTOM (317).

Asia:—Malay Archipelago, Foraminifera, MILLETT (236 & 237).
Seas around Japan, list of *Ceratia* from, OKAMURA & NISHIKAWA (253).

Australasia:—Australia, Foraminifera from, JENSEN (153).
New Zealand, complete list of Protozoan fauna of, HUTTON (147).

America:—Gulf of Mexico, Biological Station, Protozoan fauna from neighbourhood of, SMITH (325).

B. GEOLOGICAL.

Quaternary:—Post-glacial beds, Altcar, Lancs., Foraminifera, READE (282).

Glacial sands, Malone (Belfast), Foraminifera from, GOUGH (125).

Tertiary:—Miocene, Italy, distribution of *Textularidæ* in, FORNASINI (112).

Miocene, Piedmont, new Foraminifera, SILVESTRI (321).

Miocene, Maryland, Foraminifera, BAGG (9); Radiolaria, MARTIN (228).

Miocene (?), Andalusia (Guadalquivir), Foraminifera (*Lepidocyclus* and *Discospirina*), DOUVILLÉ (84).

Tertiary (Miocene?) Wels, Austria, Foraminifera, SCHUBERT (309).

Upper Eocene and Oligocene, Brown's Creek, Victoria, Foraminifera, CHAPMAN (71).

Eocene, Maritime Alps and Pyrenees, *Orbitoidæ*, many n. spp., SCHLUMBERGER (305).

Eocene, S. Genesio (Turin), Foraminifera, LEARDI (177 & 178).

Eocene, Mt. Judica and district of Catenanuova (Catania), Foraminifera, CHECCIA-RISPOLI (72).

Middle Eocene, Dardanelles, *Nummulites* from, HOLLAND (145).

Eocene (*Nummulites*-chalk), Austria, various *Nummulitidæ* and *Orbitoidæ*, PREVER & RZEHA (276).

Eocene ("Flysch"), Montenegro, Foraminifera, mostly *Nummulitidæ*, MARTELLI (227).

Tertiary, table of comparative distribution of the chief forms of *Nummulites* sens. lat. in, PREVER (275).

Tertiary, Valley of the Guadalquivir, *Nummulitidæ*, CALDERON (55).

Early Tertiary limestones, Batjan and Obi (Malay Archipelago), occurrence of Foraminifera, MARTIN (229).

Tertiary, Saratow (region of Volga), *Nodosaria raphanistrum*, ARKHANGELSKII (5).

Secondary:—Cretaceous to Miocene, Galicia, Foraminifera, listed, FRIEDBERG (114).

Upper Cretaceous, England, Foraminifera, JUKES-BROWNE (154).

Cretaceous, Eastern Bohemia, Foraminifera, JAHN (149).

Cretaceous, Bisbee, Arizona, *Orbitolina texana*, STANTON (331).

Cretaceous, Pondoland, South Africa, Foraminifera, CHAPMAN (69).

Lower Cretaceous, Spain, new *Orbitoides* and *Orthophragminæ*, PREVER (272).

Jurassic (lower Oolite), W. Australia, Foraminifera, CHAPMAN (70).

Jurassic, Memel (Königsberg), Foraminifera, BRÜCKMANN (46).

Primary:—Coal measures, Mississippi Valley, *Triticites*, a new Foraminiferan, GIRTY (120).

Coal-measures, in the pollen chambers of *Stephanospermum*, Infusoria allied to *Cinetoconia*, RENAULT (284).

Carboniferous limestone, Bisbee, Arizona, *Fusulina cylindrica*, Girty (121).

Carboniferous, Colorado, *Fusulina cylindrica*, Girty (122).

Permo-Carboniferous, Kansas, Foraminifera, SPANDEL (329).

C. PARASITIC (including commensalism).

Algae:—In the cells of *Valonia* (one of the Siphonæ), *Nassula* sp., KÜSTER (162).

Protozoa:—In *Amœba viridis*, nucleus, a Fungus, GRUBER (128).

In *Paramœcium caudatum*, meganucleus, *Caryoryctes cytoryctoides* n. g., n. sp., CALKINS (58).

Echinodermata:—In *Cucumaria pentactes* and *C. planci*, respiratory trees and coelome, *Cystobia minchinii* n. sp., WOODCOCK (364).

In *Sphærechinus granularis* and *Strongylocentrotus lividus*, intestine, *Anophrys echini* n. sp., DI MAURO (231).

Chaetopoda:—In *Audouinia tentaculata*, "cardiac body," *Angeiocystis audouinii* n. g., n. sp., BRASIL (40); in *A. t.*, intestine, *Anoplophrya brasili* n. sp., LÉGER & DUBOSCQ (193).

In marine *Tubificidae* (*Chitellio arenarius* and *Hemitubifex benedii*), intestine, *Sphæractinomyxon stolci* n. g., n. sp., CAULLERY & MESNIL (64).

In *Tubifex tubifer*, chloragogenous cells, a Sporozoan unidentified (either a Coccidian or a Gregarine), LÉGER (183).

Hirudinea:—In digestive tube of various Hirudinea parasitic on fishes (*Placobdella solea*, *P. scorpii*, *Branchellion torpedinis*, *Trachelobdella lubrica*), bodies very like ookinetes of Hæmogregarines, BRUMPT (48).

Ectoparasitic on *Clepsine bioculata*, *Opercularia clepsinis* n. sp., POPOW (271).

In *Helobdella algira*, digestive tube, *T. inopinatum*, BILLET (20).

In *Hemiclepsis marginata*, digestive tube, *Trypanoplasma varium* n. sp., LÉGER (185); in *H. m.* (ectoparasitic on fish), digestive tube, small, active Trypanosomes, BRUMPT (48).

In *Placobdella catenigera*, digestive tube, *Hæmogregarina bagensis*, BRUMPT (48).

In *Piscicola* sp., digestive tube, *Trypanosoma barbatulæ* n. sp., LÉGER (184).

Crustacea:—In *Carcinus mœnas*, musculature, *Thelohania mœnadis* n. sp., PEREZ (263).

Myriapoda:—In *Chordeuma sylvestre*, intestine, *Stenophora chordeumæ* n. sp., LÉGER & DUBOSCQ (192).

In *Craspedosoma rawlinsii simile*, intestine, *Stenophora aculeata* n. sp., LÉGER & DUBOSCQ (192).

In intestine of *Julus albipes*, *J. londinensis*, *Schizophyllum mediterraneum* and *S. sabulosum*, *Stenophora juli*, LÉGER & DUBOSCQ (192).

In *Lysiopetalum fetidissimum*, intestine, *Stenophora silene* n. sp., LÉGER & DUBOSCQ (192).

In *Pachypylus varius*, intestine, *Stenophora producta* n. sp., LÉGER & DUBOSCQ (192).

Insecta:—In the following Lepidoptera, new *Glugeida*, viz.: *Halesidotis* sp.,—*Glugea halesidotis*, *Cæculia* sp.,—*G. cæculiæ*, *Hydria* sp.,—*G. hydriæ*, *Heliotis armigera*—*G. heliotidis*, *Micrattacus nana*—*G. micrattaci*, LUTZ & SPLENDRE (213).

In *Anopheles maculipennis* (larvæ), fat bodies only, *Thelohania legeri* n. sp., HESSE (140).

In *Embia solieri*, intestine, *Gregarina marteli* n. sp., body cavity, *Diplocystis clerci* n. sp., and *Adelea transita* n. sp., LÉGER (190 & 189).

In *Olocrates gibbus*, intestine, *Stylorhynchus oblongatus*, LÉGER (188).

In *Periplaneta orientalis*, coelome, *Diplocystis schneideri*, WOODCOCK (364).

In *Sarcophaga hæmorrhoidalis*, digestive tube, *Herpetomonas sarcophagæ* n. sp., PROWAZEK (277).

In *Scaurus tristis*, intestine, *Stylorhynchus longicollis*, LÉGER (188).

In *Tabanus glaucopsis* (probably also in *Hæmatopota italica*), digestive tube, *Herpetomonas subulata* n. sp., LÉGER (186).

Pisces:—In blood of marine Teleosteans, new Hæmotozoa, as follows: *Platessa vulgaris*—*Trypanosoma platessæ* and *Hæmogregarina p.*, *Flesus vulgaris*—*T. flesi* and *H. f.*, *Platophrys laterna*—*T. laternæ* and *H. l.*, LEBAILLY (179); also in *Blennius pholis*—*T. delagei*, *Callionymus dracunculus*—*T. callionymi*, *H. c.* and *H. quadrigemina*, *Cottus bubalis*—*T. cotti* and *H. c.*, *Gobius niger*—*T. gobii*, *H. g.* and *H. blanchardi*, *Limanda platessoides*—*T. limandæ*, BRUMPT & LEBAILLY (50).

In *Box boops*, rectum, *Opalina saturnalis* n. sp., LÉGER & DUBOSCQ (193).

In blood of: bream, *Trypanosoma abramis* n. sp.; carp, *T. danilewskyi* n. sp.; *Tinca tinca*, *T. tinçæ* n. sp., LAVERAN & MESNIL (176).

In carp, blood, *Trypanosoma danilewskyi*, LAVERAN (172).

In *Cobitis barbatula*, blood, *Trypanosoma barbatulæ* n. sp., and *Trypanoplasma varium* n. sp., LÉGER (184 & 185).

In *Phoxinus phoxinus* (minnow), blood, *Trypanoplasma borreli*, LÉGER (180).

In plaice and flounders, lymph channels (dermal and mesenteric) *Lymphocystis johnstonei* n. g., n. sp., WOODCOCK (362).

In *Pleuronectes platessa*, gut-wall, *Glugea stephani*; otic capsule, *Sphærospora platessæ* n. sp., WOODCOCK (361).

In *Pseudopleuronectes americanus* (winter-flounder), gut-wall, *Glugea stephani*, WOODCOCK (361).

In *Rhombus triacanthus* (butter-fish), liver, *Pleistophora* sp., WOODCOCK (361).

In rainbow-trout, skeletal and connective tissue, principally of the head region (auditory organ), but not the brain itself, *Lentospora* (nom. nov.) *cerebralis*, PLEHN (269).

Amphibia:—In *Rana esculenta*, blood, *Trypanosoma inopinatum* n. sp., SERGENT (313).

In the blood of a frog (undetermined), *Trypanosoma nelspruitense* n. sp., LAVERAN (171).

Reptilia:—In *Bufo mauritanicus*, blood, *Hæmogregarina tunisiensis* n. sp., NICOLLE (247).

In *Emys leprosa*, blood, *Hæmogregarina bagensis* n. sp., DUCLOUX (88).

In *Gongylus ocellatus*, blood, *H. sergentium* n. sp., NICOLLE (248).

In *Hemidactylus leschenaultii* (a gecko), blood, *Hæmocystidium simondi* n. g., n. sp., CASTELLANI & WILLEY (63).

In *Lacerta muralis*, cloaca and rectum, *Trichomonas lacertæ* n. sp., PROWAZEK (278); in *L. ocellata*, blood, *Hæmogregarina curvirostris* n. sp., BILLET (24), and *H. biretorta* n. sp., NICOLLE (249).

In *Nicoria trijuga* (a tortoise), blood, *Hæmogregarina nicoriæ* n. sp., CASTELLANI & WILLEY (63).

In *Psammodromus algirus*, blood, *H. psammodromi* n. sp., SOULIÉ (327).

In *Testudo mauritanica*, blood, *H. mauritanica* n. sp., SERGENT (314).

In *Tropidonotus piscator*, blood, *H. mirabilis* n. sp., CASTELLANI & WILLEY (63).

In *Tropidonotus viperinus*, blood, *H. viperini* n. sp., BILLET (22).

Aves:—Occurrence of "*Hæmamæbæ*" and Trypanosomes in the blood of various Algerian birds, and their relative abundance, SERGENT (315).

In *Padda oryzivora*, blood, *Trypanosoma padde* n. sp., LAVERAN & MESNIL (176).

In *Scops bakkamæna* (an owl), blood, *Halteridium danilewskyi*, CASTELLANI & WILLEY (63).

Mammalia:—In *Mus musculus*, intestine, *Dicercomonas muris* and *D. intestinalis*, FOA (109).

In white rats, blood, *Trypanosoma lewisi*, LAVERAN & MESNIL (175).

In the rat, intestine, *Ootomitus intestinalis* n. sp., PROWAZEK (278).

In a rabbit, blood, a Trypanosome, PETRIE (266).

In man, blood (free and endoglobular), *Piroplasma hominis* n. sp., WILSON & CHOWNING (360); (probably *Spermophilus columbianus*, in whose blood the parasites also occur, is the "natural" vertebrate host).

In buccal cavity of man, in relation with the teeth (caries, cement), *Entamoeba buccalis* n. sp., PROWAZEK (279).

IV. SYSTEMATIC.

[Note. Only new forms, forms whose occurrence is of special interest, and forms described and figured are mentioned specifically.]

A. PROTOZOA IN GENERAL.

[For lists of Protozoa from various localities, see under Plankton (II. c. 1) and Distribution (III. A.).]

Protozoa, their rôle in purifying rivers, WEIGELT (354) pp. 507-514, with figg. 57-77 illustrative of different forms.

B. GYMNO MYXA.

1. MYCETOZOA.

(a) Protomyxidea:—

Biomyxa vagans, note on occurrence, SMITH (325) p. 48.

Vampyrella flabellata n. sp., occurrence and description, CASH (60) p. 224, pl. xxvi, figg. 5 & 6.

(b) Mycetozoida:—

Allied to Mycetozoida.

Chlamydomyxa montana, general account of, PENARD (260) pp. 296-334, 19 text-figg.

2. RHIZOPODA.

(a) Lobosa:—

Amœba coli, of so-called tropical dysentery, specific characters described, VERDUN (350) pp. 184 & 185; *A. dumetosa* n. sp., p. 392, 6 text-figg., *A. pulverulenta* n. sp., p. 395, 4 text-figg., occurrence and diagnoses, PENARD (259); *A. pilosa* n. sp., occurrence and description, CASH (60) p. 219, pl. xxvi, fig. 8; *A. proteus*, evidences of a sexual cycle in the life-history of, CALKINS (57) pp. 1-16, 3 pls., 1 text-fig.; *A. p.*, division, especially of the nucleus, described, AVERINTZEV (7) pp. 399 & 400; *A. terricola*, discharge of the contractile vacuole in, described, PENARD (261) pp. 659-662, 2 text-figg.; *A. viridis*, notes on, and nuclear infection of, by a Fungal parasite, GRUBER (128) pp. 67-76, pl. vii.

Cochliopodium ambiguum n. sp., p. 405, 4 text-figg., *C. spumosum* n. sp., p. 401, 5 text-figg., occurrence and diagnoses, PENARD (259).

- Diffugia minutissima* n. sp. occurrence and diagnosis, PENARD (259) p. 410, 2 text-figg.; *D. urceolata*, full account of, with special reference to the chromidial substance, conjugation, and the nature of encystment, ZÜLZER (369) pp. 240-295, pls. x-xii, 2 text-figg.
- Diffugiella* n. g. diagnosed, p. 224, *D. apiculata* n. sp., occurrence and description, CASH (60) p. 225, pl. xxvi, fig. 7.
- Entamæba buccalis* n. sp., from buccal cavity of man, described, PROWAZEK (279) pp. 42-44; *E. histolytica* (of tropical dysentery) shewn by its development to be quite distinct from *E. coli*, LESAGE (202) pp. 1237-1239.
- Gringia filiformis*, note on, SMITH (325) p. 47.
- Pelomyxa fragilis* n. sp., occurrence and diagnosis, PENARD (259) p. 397, 4 text-figg.
- Penardia* n. g. diagnosed, p. 223, *P. mutabilis* n. sp., occurrence and description, CASH (60) p. 223, pl. xxvi, figg. 1 & 2.
- Pseudochlamys arcelloides* n. sp., occurrence and diagnosis, PENARD (259) p. 408, 4 text-figg.
- Pseudodiffugia virescens* n. sp., occurrence and diagnosis, PENARD (259) p. 421, 2 text-figg.

(b) Foraminifera:—

Foraminifera, structural characters of the shell of floating forms; their adaptation to this mode of life, KEMNA (155) pp. cix-cxxvii.

Foraminifera from:—Belgian coast, GILSON (118) p. 33; Lough Larne district, with mention of less common forms, GOUGH (124); Australia, listed, JENSEN (153); Malay Archipelago, occurrence and notes on, MILLETT (236 & 237); Lagos and Southern Portugal, NOBRE (250), p. 153; coast of the Island of Delos (Grecian Archipelago), SIDEBOTTOM (317); Plymouth Sound and neighbourhood, listed, WORTH (366) pp. 174-185.

+Foraminifera, mostly lists, from:—Tertiary, Valley of the Guadalquivir (*Nummulitidae*), CALDERON (55); Eocene, Mount Judica and district of Catenanuova (Catania), described, CHECCHIA-RISPOLI (72); Miocene (?), Andalusia, occurrence (*Lepidocyclina* and *Discospirina*), DOUVILLÉ (84); Cretaceous to Miocene, Galicia, FRIEDBERG (114); Glacial sands, Malone (Belfast), GOUGH (125) p. 258; Cretaceous, Eastern Bohemia, JAHN (149) p. 89; Upper Chalk, England, including several unnamed n. spp., JUKES-BROWNE (154) pp. 303-5, 308, 316, 318, 323, 324, 328-337, 340, 343, 347-353, 366, 371-375 & 510-519; Eocene, near Turin, notes on, LEARDI (177); Eocene ("Flysch"), Montenegro, mostly *Nummulitidae*, MARTELLI (227); early Tertiary limestones, Batjan and Obi (Malay peninsula), occurrence, MARTIN (229); Eocene, Austria, *Nummulitidae* and *Orbitoidae*, PREVER & RZEHAČ (276); Post glacial beds, Altcar, Lancs., READE (282) pp. 361-368; Tertiary (Miocene?), Wels, Austria, notes on, SCHUBERT (309).

+*Ammodiscus concavus* n. sp., Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329), p. 179, fig. 1; *A. incertus* var. *macilenta* n. var., occurrence and diagnosis, CHAPMAN (71) p. 228, pl. xxii, fig. 5; *A. nidiformis* n. sp., Jurassic, Memel, described, BRÜCKMANN (46) p. 29, pl. iii, figg. 22 & 23.

+*Anomalina grosserugosa*, Miocene, Maryland, described, BAGG (9) p. 466, pl. cxxxi, fig. 11.

Articulina lineata, p. 17, pl. v, fig. 1, *A. sagra*, p. 17, pl. iv, figg. 18-20, text-fig. 6, *A. sulcata*, p. 16, pl. iv, figg. 16 & 17, text-fig. 5, notes on, SIDEBOTTOM (317).

+*Assilina depressa*, p. 397, pl. xiv, fig. 9, *A. discoidalis* varr., p. 396, pl. xiv, fig. 8, *A. nitida*, p. 397, pl. xiv, fig. 11, *A. radiolata*, p. 397, pl. xiv, fig. 12, *A. undata*, p. 397, pl. xiv, fig. 10, forms originally described by

- D'Orbigny in the "Prodrome," notes on, FORNASINI (111), figures taken from the "Planches inédites"; *A. leymeriei*, p. 194, pl. i, figg. 9-17, *A. placentula*, p. 193, pl. i, figg. 1-8, Eocene, Austria, described, PREVER & RZEHAŁ (276); *A. spira* (A-form), occurrence and note on, CHECCHIA-RISPOLI (72) p. 53, pl. ii, fig. 3.
- Astrorhiza* sp., occurrence of an unusually large specimen off Rathlin Island (Antrim), WELCH (355) p. 27.
- +*Baculogypsina*, remarks on the genus, p. 117, *B. sphærolata*, fig. 14, *B. sp.*, figg. 12 & 13, occurrence, PREVER (274); *B. sphærolata* (Pkr. & J.), Eocene, S. Genesio, described, LEARDI (178), p. 185, pl. v, figg. 6-14.
- +*Bathysiphon filiformis*, p. 412, pl. xix, fig. 13, *B. taurinensis*, p. 412, pl. xix, figg. 10-12, Tertiary, Wels, Austria, notes on, SCHUBERT (309).
- +*Bigenerina agglutinans*, Jurassic, Meinel, described, BRÜCKMANN (46) p. 29, pl. iv, fig. 25; *B. eximia*, Permo-Carboniferous, Kansas, note on, SPANDEL (329) p. 181, fig. 2; *B. robusta*, Tertiary, Austria, note on, SCHUBERT (309) p. 415, pl. xix, fig. 9.
- Biloculina elongata* d'Orb., note on, SIDEBOTTOM (317) p. 3, pl. ii, fig. 8; *B. sphaera*, in plankton, Capri, LO BIANCO (205) p. 62, pl. xli, fig. 179.
- +*Bolivina beyrichii* var. *alata*, Miocene, Maryland, described, BAGG (9) p. 473, pl. cxxxii, fig. 14.
- +*Bruguieria (Camerina) levigata*, Eocene, Austria, note on, PREVER & RZEHAŁ (276) p. 197, pl. ii, fig. 35; *B. libyca* n. sp., diagnosis and synonymy, PREVER (273) p. 32.
- Bulina elongata*, occurrence in British seas (Lough Larne), GOUGH (124) p. 37.
- +*Bulimina affinis* var. *tenuissimestriata* n. var., p. 416, pl. xix, fig. 5, *B. elegans*, var. *gibba* n. var., p. 416, pl. xix, fig. 6, *B. rotula* n. sp., p. 416, pl. xix, fig. 7, Tertiary, Austria, diagnosed, SCHUBERT (309); *B. gregorii* n. sp., Oolite, W. Australia, diagnosed, CHAPMAN (70) p. 187, pl. xxii, fig. 3; *B. trigonula* nom. nov., var. *inornata* n. var., Cretaceous, Pondoland, diagnosed, id. (69) p. 224, pl. xxix, fig. 3.
- +*Calcarina tetradra*, occurrence and remarks on, CHECCHIA-RISPOLI (72) p. 31, pl. ii, fig. 12.
- +*Camerina levigata*, p. 34, *C. italica* (A-form), p. 37, pl. ii, figg. 28 & 29, occurrence and remarks on, CHECCHIA-RISPOLI (72).
- Carpenteria proteiformis* Goës, note on, MILLETT (236) p. 496, pl. x, figg. 1 & 2.
- +*Chapmania aegyptiensis*, occurrence in Tuscany (Cretaceous) and note on, SILVESTRI (323) pp. 117-119, 3 text-figg.
- +*Conulites aegyptiensis* Chapman, Eocene, S. Genesio, described, LEARDI (178) p. 182, pl. v, figg. 1-4.
- +*Cristellaria baltica* n. sp., p. 13, pl. ii, fig. 13, *C. bronni*, p. 17, pl. ii, figg. 5-12, *C. cornucopiae*, p. 17, pl. ii, figg. 17-19, *C. flagellum*, p. 14, pl. ii, fig. 14, *C. harpa*, p. 18, pl. ii, figg. 20-22, *C. hauerina*, p. 19, pl. ii, fig. 25, *C. lithuanica* n. sp., p. 15, pl. ii, fig. 15, *C. manubrium*, p. 19, pl. ii, figg. 23 & 24, *C. mitellata* n. sp., p. 22, pl. ii, figg. 26 & 27, *C. rotulata*, p. 14, pl. ii, figg. 1-4, pl. iii, figg. 1-5, *C. virgata* n. sp., p. 16, pl. ii, fig. 16, Jurassic, Memel, described, BRÜCKMANN (46); *C. colligata* n. sp., p. 20, pl. iii, figg. 6 & 7, *C. flexuosa* n. sp., p. 20, pl. iii, fig. 8, *C. italica*, p. 21, pl. iii, figg. 10-12, *C. mamilligera*, p. 16, pl. iii, fig. 17, *C. osnabrugensis*, p. 15, pl. iii, figg. 14-16, *C. reniformis*, p. 21, pl. iii, fig. 13, *C. subangulata*, p. 22, pl. iii, fig. 9, Jurassic, Memel, described, id. (46); *C. costata* var. *compressa* n. var., p. 194, pl. xxii, fig. 14, *C. c. var. seminuda* n. var., p. 195, pl. xxii, fig. 15, *C. daintreei* n. sp., p. 194, pl. xxii, fig. 13, *C. decipiens*, p. 193, pl. xxii, fig. 12, *C. limata*, p. 195, pl. xxii, fig. 16, *C. prominula*, p. 193, pl. xxii, fig. 11, *C. rotulata*, p. 192, pl. xxii, fig. 9, *C. subalata*, p. 193, pl. xxii, fig. 10,

- Oolite, W. Australia, remarks on, CHAPMAN (70); *C. cultrata*, p. 474, pl. cxxxii, fig. 15, *C. wetherellii* p. 475, pl. cxxxii, fig. 16, Miocene, Maryland, described, BAGG (9); *C. josephina* var. *umbonata* n. var., Tertiary, Austria, diagnosed, SCHUBERT (309) p. 418, pl. xix, fig. 4; *C. subalata*, Cretaceous, note on, CHAPMAN (69) p. 227, pl. xxix, figg. 10; *C. n. sp.*, Eocene, Turin, diagnosed, LEARDI (177) p. 163.
- Cyclammina cancellata*, microspheric form of (recent and fossil), described, SILVESTRI (320) pp. 180-185, 4 text-figg.
- †*C. complanata* n. sp., p. 228, pl. xxii, fig. 7, *C. paupera* n. sp., p. 229, pl. xxii, fig. 6, Oligocene, Victoria, diagnosed, CHAPMAN (71); *C. gracilis*, Tertiary, Austria, notes on, SCHUBERT (309) p. 414, pl. xix, figg. 1-3.
- †*Dentalina bradyi* n. sp., Permo-Carboniferous, KANSAS, diagnosed, SPANDEL (329) p. 190, fig. 9; *D. communis*, p. 29, pl. iii, figg. 30, 32 & 33, *D. pinguiculus*, p. 28, pl. iii, figg. 29 & 31, Jurassic, Memel, BRÜCKMANN (46).
- †*Dicyclina schlumbergeri*, Cretaceous, Berre, note on, SCHLUMBERGER & CHOFFAT (306) p. 362, 2 text-figg.
- †*Discorbina orbicularis*, Miocene, Maryland, described, BAGG (9) p. 463, pl. cxxxi, fig. 5; *D. rosacea*, Oolite, W. Australia, note on, CHAPMAN (70) p. 198, pl. xxii, fig. 23.
- Ellipsobulimina sequenzai* n. sp., occurrence and diagnosis, SILVESTRI (321) p. xii, fig. 7.
- Ellipsopleurostomella pleurostomella* n. sp., p. 8, figg. 4 & 5, *E. rostrata* n. sp., p. 7, fig. 3, *E. schlichti* n. sp., p. 5, figg. 1 & 2, occurrence and description, SILVESTRI (321).
- †*Epistomina porcellanea* n. sp., p. 26, pl. iv, figg. 17-19, *E. reticulata*, p. 23, pl. iv, figg. 6-9, *E. spinulifera*, p. 25, pl. iv, figg. 1-5, *E. stelligera*, p. 23, pl. iv, figg. 10 & 11, *E. sp.*, p. 27, pl. iv, figg. 20 & 21, Jurassic, Memel, described, BRÜCKMANN (46).
- †*Flabellina dilatata*, Oolite, W. Australia, remarks on, CHAPMAN (70) p. 196, pl. xxii, fig. 18.
- †*Frondicularia*, diagnosis of the genus, p. 6, *F. borussica* n. sp., p. 11, pl. i, fig. 5, *F. distorta* n. sp., p. 11, pl. i, fig. 23, *F. glandulinoides*, p. 12, pl. i, fig. 27, *F. mollerti*, p. 7, pl. i, figg. 1-4, 6-8, *F. nikitini*, p. 9, pl. i, figg. 9-14, *F. schellureni* n. sp., p. 10, pl. i, figg. 15-17, *F. spatulata*, p. 13, pl. i, figg. 18-22, *F. supracalloviensis*, p. 12, pl. i, figg. 24, 26, Jurassic, Memel, described, BRÜCKMANN (46).
- †*Fusulina cylindrica*, occurrence, Carboniferous limestone, Bisbee, Arizona, Girty (121) p. 50, pl. xi, fig. 1; *F. c.*, Carboniferous, Colorado, note on, Girty (122) p. 317; *F. regularis*, Permo-Carboniferous, diagnosed, SPANDEL (329) p. 192, fig. 10.
- †*Geinitzina postcarbonica* n. sp., Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 189, fig. 8.
- †*Glandulina lakuseni*, Jurassic, Memel, described, BRÜCKMANN (46) p. 27, pl. iii, fig. 28.
- Globigerina bulloides*, occurrence, plankton, Capri, Lo Bianco (205) p. 58, pl. xxxvii, fig. 156.
- †*G. bulloides*, p. 468, pl. cxxxii, figg. 1 & 2, *G. cretacea*, p. 469, pl. cxxxii, fig. 3, Miocene, Maryland, described, BAGG (9); *G. canaliculata*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 229, pl. xxix, fig. 12.
- †*Gümbelia* (*Lenticulina*) *nicolisi* n. sp., Eocene, Monte Baldo, diagnosed, PREVER (275) p. 478, figg. 3 & 4, *G. sub-montis fractii* n. sp., p. 33, *G. sub-oosterii* De la Harpe, p. 35, var. *pretiosa* n. var., p. 36, diagnoses and synonymy, PREVER (273).
- †*Haplophragmium latidorsatum*, p. 227, pl. xxii, fig. 1, *H. canariense*, p. 228, pl. xxii, fig. 2, occurrence and note, CHAPMAN (71); *H. meridionale* n. sp., p. 223, pl. xxix, fig. 2, *H. neocomianum*, p. 223, pl. xxix, fig. 1,

- Cretaceous, Pondoland, diagnosed, id. (69); *H. n.*, Oolite, W. Australia, note on, id. (70) p. 186, pl. xxii, fig. 1.
- Hauerina compressa* d'Orb., note on, SIDEBOTTOM (317) p. 19, pl. v, figg. 7 & 8, text-fig. 8.
- †*Heterostegina suborbicularis*, notes on forms of, originally described by D'Orbigny in the "Prodrome," FORNASINI (111) p. 396, pl. xiv, figg. 5-7, figures taken from the "Planches inédites."
- Lageria levis*, Australian sands, note on, JENSEN (153) p. 816, pl. xxiii, fig. 2; *L. ventricosa* n. sp., occurrence and description, SILVESTRI (321) p. 11, fig. 6.
- †*L. apiculata* var. *tetracarinata* n. var., Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22.
- †*Laharpeia* (*Camerina*) *gassinensis* n. sp., Eocene, Roc di Gassino, diagnosed, PREVER (275) p. 477, figg. 1 & 2.
- †*Lenticulina garganica* (A) p. 38, pl. ii, figg. 7 & 8, var. *samnitica* (A) p. 39, pl. ii, fig. 30, *L. curvispira*, p. 40, pl. ii, fig. 31, *L. kaufmanni*, p. 42, pl. ii, fig. 32, *L. irregularis* (B) p. 44, *L. ramondi* (A) p. 44, *L. beaumonti* (B) p. 45, *L. guettardi*, p. 47, pl. ii, figg. 4-6, *L. contorta* (B) p. 51, pl. ii, fig. 1, *L. budensis*, p. 52, pl. ii, fig. 2, occurrence and remarks on, CHECCHIA-RISPOLI (72).
- †*Lepidocyclus*, description, distribution and relationships of the genus, *L. mantelli*, p. 10, pl. i, fig. 4, pl. ii, fig. 18, pl. iii, figg. 7, 12, *L. rawlini* n. sp., p. 11, pl. i, figg. 3, 6, 9, 13, 16, pl. ii, figg. 3, 10, pl. iii, figg. 4, 14, *L. dilatata*, p. 12, pl. i, fig. 2, pl. ii, figg. 8, 21, pl. iii, figg. 10, 15, *L. elephantina*, p. 13, pl. ii, figg. 13, 19, *L. schlumbergeri* n. sp., p. 14, pl. i, fig. 10, pl. ii, fig. 6, *L. chaperi* n. sp., p. 14, pl. ii, fig. 5, *L. gallieni* n. sp., p. 15, pl. i, fig. 8, pl. ii, fig. 1, *L. joffrei* n. sp., p. 16, pl. ii, fig. 17, pl. iii, fig. 11, *L. marginata*, p. 16, pl. i, fig. 7, pl. ii, figg. 7, 9, 11, 20, pl. iii, figg. 3, 8, 9, 13, *L. morgani* n. sp., p. 17, pl. i, figg. 12, 15, 17, pl. ii, figg. 4, 12, pl. iii, fig. 2, *L. sumatrensis*, p. 18, pl. i, fig. 14, pl. ii, fig. 15, pl. iii, fig. 6, *L. tournoueri* n. sp., p. 19, pl. i, fig. 5, pl. ii, figg. 2, 14, pl. iii, fig. 1, *L. canellei* n. sp., p. 20, pl. i, fig. 1, pl. iii, fig. 5, *L. verbeeki*, p. 20, pl. i, fig. 11, pl. ii, fig. 16, *L. munieri* n. sp., p. 20, pl. ii, fig. 22, diagnoses and occurrence, LEMOINE & DOUVILLÉ (201); *L.*, discussion of the genus, p. 119, *L. burdigalensis*, fig. 24, *L. dilatata*, fig. 15, *L. formai* n. sp., diagnosed, p. 127, figg. 20 & 21, *L. mantelli*, figg. 16 & 17, *L. marginata*, fig. 23, *L. saccoi* n. sp., p. 127, fig. 19, *L. vidali*, fig. 1, *L. sp.* figg. 18, 22, 25, occurrence and notes, PREVER (274); *L. (?) aspera*, occurrence and note, CHECCHIA-RISPOLI (72) p. 64, pl. ii, figg. 10, 11, 15, 16.
- Lingulina carinata*, Australian sands, note on, JENSEN (153) p. 822, pl. xxiii, fig. 13.
- †*Lituola simplex* n. sp., Oligocene, Victoria, diagnosed, CHAPMAN (71) p. 228, pl. xxii, figg. 3 & 4.
- †*Margulinula compressa*, p. 188, p. xxii, fig. 4, *M. solida*, p. 189, pl. xxii, fig. 17, Oolite, W. Australia, notes on, CHAPMAN (70); *M. macilenta*, Jurassic, Memel, described, BRÜCKMANN (46) p. 31, pl. iii, fig. 21.
- Massilina annectens* (d'Orb.), p. 18, pl. v, figg. 2-4, *M. rugosa* n. sp., p. 18, pl. v, figg. 5 & 6, text-fig. 7, notes on, SIDEBOTTOM (317).
- Microgromia elegantula* n. sp., p. 416, 1 text-fig., *M. levipes* n. sp., p. 418, 4 text-figg., occurrence and diagnoses, PENARD (259).
- †*Miogyopsisina*, remarks on the genus, p. 125, *M. dervieuxi* n. sp., p. 127, figg. 32 & 33, *M. irregularis*, figg. 26-28, 30, 31, 34, *M. taurinensis* n. sp., p. 127, fig. 29, occurrence and diagnoses, PREVER (274).
- Miliolina bicornis*, p. 14, pl. iv, figg. 13 & 14, *M. contorta*, p. 13, pl. iv, figg. 7-9, *M. gracilis*, p. 14, pl. iv, figg. 10-12, *M. levigata*, p. 12, pl. iv, figg. 1-3, text-fig. 4, *M. pulchella*, p. 15, pl. iv, fig. 15, *M. pygmaea*, p. 13, pl. iv, figg. 4-6, *M. reticulata*, p. 10, pl. iii, figg. 8-10, *M.*

- seminulum*, p. 10, pl. iii, figg. 13-15, var. *cornuta* n. var., p. 11, pl. iii, figg. 11 & 12, text-fig. 3, *M. subrotunda*, p. 8, pl. iii, figg. 1-7, text-fig. 2 notes on, SIDEBOTTOM (317); *M. excisa*, occurrence and note, MILLETT (237) p. 607, pl. xi, fig. 4.
- †*M. gramen* n. sp., *M. tenuis* n. sp., Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22; *M. seminulum*, Miocene, Maryland, described, BAGG (9) p. 481, pl. cxxxiii, fig. 12.
- †*Monogenerina* n. g., characteristics of the genus, p. 181, *M. atava* n. sp., p. 183, fig. 3, *M. nodosariformis* n. sp., p. 184, fig. 4, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329).
- Nodosaria scalaris*, Australian sands, note on, JENSEN (153) p. 816, pl. xxiii, fig. 1.
- †*N. postcarbonica* n. sp., Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 188, fig. 7; *N. prima*, Jurassic, Memel, described, BRÜCKMANN (46) p. 28, pl. iii, fig. 27; *N. prismatica*, p. 225, pl. xxix, fig. 5, *N. zippei*, p. 226, pl. xxix, fig. 6, Cretaceous, Pondoland, notes on, CHAPMAN (69); *N. raphanistrum*, Tertiary, Saratow (near the Volga), note on, ARKHANGELSKII (5) p. 60, pl. xi, fig. 26.
- Nonionina orbicularis* Brady, note on, MILLETT (237) p. 600, pl. xi, fig. 1.
- †*N. scapha*, Miocene, Maryland, described, BAGG (9) p. 460, pl. cxxxi, figg. 1-3.
- Nubecularia divaricata* Brady, p. 2, pl. ii, figg. 5-7, *N. lucifuga* Defr., p. 2, pl. ii, figg. 1-4, notes on, SIDEBOTTOM (317).
- †*Nummulites* sens. lat. (see Prot. Rec. 1902, p. 66), general considerations of, and its sub-divisions, distribution in space and time, PREVER (275) pp. 461-487, 7 text-figg., 1 table; *N. distans* (A and B forms) p. 293, pl. xxv, figg. 5 & 6, *N. dufrenoyi* (A & B) pp. 292 & 293, pl. xxv, figg. 1-4, Middle Eocene, Dardanelles, described, HOLLAND (145).
- †*Operculina costata*, p. 395, pl. xiv, fig. 1, *O. gaimardi*, p. 396, pl. xiv, fig. 4, *O. madagascariensis*, p. 395, pl. xiv, fig. 3, *O. thounii*, p. 395, pl. xiv, fig. 2, originally described by D'Orbigny in the "Prodrome," notes on, FORNASINI (111), the figures being taken from the "Planches inédites"; *O. granulosa*, p. 32, pl. ii, fig. 13, *O. canalifera* (B-form) p. 33, pl. ii, fig. 14, occurrence and notes on, CHECCHIA-RISPOLI (72).
- †*Orbitoides vidali* n. sp., Lower Cretaceous, Spain, diagnosed, PREVER (272) p. 981, figg. 1-5.
- †*Orbitoidinae*, discussion of the sub-family and constituent genera, PREVER (274) pp. 111-128, pl. vi.
- †*Orbitolina texana*, occurrence, Cretaceous, Bisbee, Arizona, STANTON (331) p. 70, pl. xvi, fig. 4.
- Orbulina universa*, occurrence, plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 157.
- †*O. universa*, Jurassic, Memel, described, BRÜCKMANN (46) p. 32, pl. iv, fig. 24.
- †*Orthophragmina*, discussion of the genus, p. 122, *O. aspera*, figg. 4 & 5, *O. nummulitica*, fig. 9, *O. radians*, fig. 11, *O. rovasendai* n. sp., p. 127, fig. 8, *O. stellata*, figg. 6, 10, *O. varicostata*, fig. 7, occurrence and notes, PREVER (274); *O. aprutina* n. sp., p. 983, fig. 11, *O. circumvallata* n. sp., p. 987, fig. 8, *O. chelussii* n. sp., p. 984, fig. 10, *O. illyrica* n. sp., p. 984, fig. 12, *O. rugosa* n. sp., p. 987, fig. 6, *O. samnitica* n. sp., p. 985, fig. 9, *O. schlumbergeri* n. sp., p. 986, fig. 7, *O. vinassai* n. sp., p. 985, fig. 13, Cretaceous, Spain, diagnosed, PREVER (272); *O. dispansa*, p. 56, pl. ii, figg. 9, 23, *O. tenuicostata*, p. 60, pl. ii, figg. 17 & 18, *O. patellaris*, p. 61, pl. ii, fig. 35, *O. stellata*, p. 62, pl. ii, figg. 19-21, *O. stella*, p. 63, pl. ii, fig. 22, occurrence and remarks on, CHECCHIA-RISPOLI (72); *O. patellaris*, p. 120, pl. iii, fig. 6, pl. iv, figg. 13 & 14, *O. gümbeli* n. sp., p. 122, text-fig. 2, *O. radians*, p. 122, pl. iii,

- fig. 7, 9, pl. iv, figg. 15-17, *O. decorata* n. sp., p. 124, pl. iii, fig. 11, *O. muniteri*, p. 125, pl. iii, fig. 12, *O. multiplicata*, p. 125, pl. iii, fig. 10, pl. iv, figg. 18, 20, *O. stellata*, p. 126, pl. v, figg. 31-36, pl. vi, figg. 37-40, *O. lanceolata* n. sp., p. 128, pl. 5, figg. 25-30, *O. taramellii*, p. 131, pl. vi, figg. 41-46, 51, 57, *O. bayani*, p. 131, pl. v, fig. 23, pl. iv, figg. 21 & 22, *O. stella*, p. 132, pl. vi, figg. 47-50, 52-56, *O. sp.*, p. 133, pl. iii, fig. 8, Eocene, Pyrenees and Maritime Alps, described, SCHLUMBERGER (305); *O. varians*, Eocene, Austria, note on, PREVER & RZEHA (276) p. 199, pl. ii, fig. 36.
- Pamphagus bathybioticus* n. sp., occurrence and diagnosis, PENARD (259) p. 413, 6 text-figg.; *P. hyalinus*, peculiar habit of, LORD (208), pp. 76-78, pl. iii, fig. 1.
- †*Paronæa contorta*, p. 192, pl. ii, figg. 28-34, *P. ramondi*, p. 192, pl. i, figg. 18-20, pl. ii, figg. 21 & 22, *P. subramondi*, p. 193, pl. ii, figg. 23-27, Eocene, Austria, described, PREVER & RZEHA (276); *P. curvispira* (Mngh.), subdivided into four sections, *P. curvispira* sensu stricto (diagnosis and synonymy, p. 31), and *Bruguieria libyca* n. sp., *Gümbelia sub-montis fractii* n. sp., and *G. sub-oosterii* De la H. (qq. v.), PREVER (273).
- Pelosina distoma* n. sp., diagnosed, MILLETT (237) p. 608, pl. xi, figg. 5 & 6.
- Planispirina schlumbergeri* n. sp., p. 20, pl. v, figg. 9-11, text-fig. 10, *P. striata* n. sp., p. 21, pl. v, figg. 12-14, text-fig. 9, diagnosed, SIDEBOTTOM (317).
- †*Planorbulina mediterraneensis*, Miocene, Maryland, described, BAGG (9) p. 463, pl. cxxxi, fig. 6.
- †*Pleurostomella subnodosa*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 224, pl. xxix, fig. 4.
- Polymorphina alveoliniformis* n. sp., p. 821, pl. xxiii, figg. 8-12, *P. hedleyi* n. sp., p. 828, pl. xxiii, fig. 14, *P. sororia*, p. 817, pl. xxiii, fig. 3, Australian sands, diagnoses and notes, JENSEN (153).
- †*P. burdigalensis*, p. 196, pl. xxii, fig. 19, *P. compressa*, p. 197, pl. xxii, figg. 21 & 22, *P. gutta*, p. 197, pl. xxii, fig. 20, Oolite, W. Australia, notes on, CHAPMAN (70); *P. compressa*, p. 476, pl. cxxxiii, fig. 1, var. *striata* n. var., p. 476, pl. cxxxiii, fig. 2, *P. elegantissima*, p. 476, pl. cxxxiii, fig. 3, *P. gibba*, p. 477, pl. cxxxiii, fig. 4, *P. lactea*, p. 477, pl. cxxxiii, figg. 5 & 6, *P. regina*, p. 478, pl. cxxxiii, fig. 7, Miocene, Maryland, described, BAGG (9); *P. gibba*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 228, pl. xxix, fig. 11; *P. irregularis* n. sp., Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22; *P. oolithica*, Jurassic, Memel, described, BRÜCKMANN (46) p. 31, pl. iii, figg. 24-26.
- Polystomella crispa* (Linn.) p. 603, pl. xi, fig. 2, *P. verriculata* Brady, p. 604, pl. xi, fig. 3, notes on, MILLETT (237); *P. macella* (perhaps n. sp.), Australian sands, note on, JENSEN (153) p. 817, pl. xxiii, fig. 4.
- †*P. striatopunctata*, Miocene, Maryland, described, BAGG (9) p. 462, pl. cxxxi, fig. 4.
- Pulvinulina brongniartii* (d'Orb.), p. 498, pl. x, fig. 4, *P. oblonga* (Will.) var. *carinata* n. var., p. 498, pl. x, fig. 3, notes on, MILLETT (236).
- †*P. carpenteri*, p. 230, pl. xxix, figg. 14, 18, *P. elegans*, p. 230, pl. xxix, fig. 13, *P. pondensis* n. sp., p. 231, pl. xxix, fig. 19, *P. reticulata*, p. 231, pl. xxix, fig. 15, Cretaceous, Pondoland, notes on, CHAPMAN (69); *P. rjåsanensis*, Jurassic, Memel, described, BRÜCKMANN (46) p. 26, pl. iv, figg. 12-16.
- †*Rhabdogonium pericardium* n. sp., Jurassic, Memel, described, BRÜCKMANN (46) p. 32, pl. iv, fig. 26.
- Rheophax eumeta* n. sp., Australian sands, diagnosed, JENSEN (153) p. 821, pl. xxiii, figg. 5-7.
- Rotalia annectens* Park. & J., p. 505, pl. x, fig. 6, var. *concinna* n. var.,

- p. 505, pl. x, fig. 7, *R. schreteriana* Park. & J., var. *inflata* n. var., p. 504, pl. x, fig. 5, notes on, MILLETT (236).
- †*R. beccarii*, p. 467, pl. cxxxi, figg. 12 & 13, var. *bræckhiana*, p. 467, pl. cxxxi, fig. 14, Miocene, Maryland, described, BAGG (9); *R. soldanii* var. *nitida*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 232, pl. xxix, fig. 17.
- †*Sagrina dimorpha* var. *ornata* n. var., Tertiary, Austria, diagnosed, SCHUBERT (309) p. 419, pl. xix, fig. 8; *S. nodosa*, Pliocene, note on, SILVESTRI (322) pp. 129-132, 2 text-figg.; *S. spinosa* n. sp., Miocene, Maryland, diagnosed, BAGG (9) p. 480, pl. cxxxiii, fig. 11.
- Sigmolina ovata* n. sp., diagnosed, SIDEBOTTOM (317) p. 6, pl. ii, figg. 12 & 13, text-fig. 1.
- †*Silvestrina* n. g., p. 122, *S. apiculata* (Schlumb.) fig. 3, *S. vandenbröcki* n. sp., p. 127, fig. 2, occurrence and diagnoses, PREVER (274).
- †*Spirocyclina choffati*, history, description, and synonymy of, SCHLUMBERGER & CHOFFAT (306) pp. 358-368, pls. ix & x.
- Spiroloculina impressa* Terq., note on, SIDEBOTTOM (317) p. 5, pl. ii, figg. 9-11.
- †*S. grata*, p. 482, pl. cxxxiii, fig. 14, *S. tenuis*, p. 483, pl. cxxxiii, fig. 13, Miocene, Maryland, described, BAGG (9); *S. sp.*, Jurassic, Memel, note on, BRÜCKMANN (46) p. 30, pl. iv, figg. 22 & 23.
- †*Tetrataxis conica* Ehr. var. *lata* n. var., Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 186, fig. 6.
- †*Textularia abbreviata*, p. 470, pl. cxxxii, fig. 4, *T. agglutinans*, p. 470, pl. cxxxii, fig. 5, *T. articulata*, p. 471, pl. cxxxii, figg. 6 & 7, *T. carinata*, p. 472, pl. cxxxii, fig. 10, *T. gramen*, p. 471, pl. cxxxii, figg. 8 & 9, *T. sagittula*, p. 472, pl. cxxxii, figg. 11 & 12, *T. subangulata*, p. 473, pl. cxxxii, fig. 13, Miocene, Maryland, described, BAGG (9); *T. crater* n. sp., Oolite, W. Australia, diagnosed, CHAPMAN (70) p. 187, pl. xxii, fig. 2; *T. gibbosa*, Permo-Carboniferous, Kansas, note on, SPANDEL (329) p. 185, fig. 5.
- †*Textulariidae*, distribution of, in Miocene of Italy, FORNASINI (112) pp. 89-116.
- Thuramina favosa* Flint, occurrence and note, MILLETT (237) p. 608, pl. xi, fig. 7.
- †*Triticites* n. g., described, for *T. (Miliolites) secalicus*, Carboniferous, Mississippi Valley, Girty (120) pp. 234-240, 5 text-figg.
- †*Trochammina bifaciata* n. sp., *T. mirabilis* n. sp., *T. simplex* n. sp., *T. variegata* n. sp., Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22.
- †*Truncatulina lobatula*, p. 464, pl. cxxxi, figg. 7 & 8, *T. variabilis*, p. 465, pl. cxxxi, figg. 9 & 10, Miocene, Maryland, described, BAGG (9); *T. schloenbachi*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 229, pl. xxix, fig. 16; *T. wuellerstorfi*, Oolite, W. Australia, note on, id. (70) p. 198, pl. xxii, fig. 24.
- †*Uvigerina canariensis*, p. 478, pl. cxxxiii, fig. 8, *U. pygmaea*, p. 479, pl. cxxxiii, fig. 9, *U. tenuistriata*, p. 479, p. cxxxiii, fig. 10, Miocene, Maryland, diagnosed, BAGG (9).
- †*Vaginulina humilis*, p. 226, pl. xxix, fig. 7, *V. intumescens*, p. 227, pl. xxix, fig. 9, *V. legumen*, p. 226, pl. xxix, fig. 8, Cretaceous, Pondoland, notes on, CHAPMAN (69); *V. intumescens*, p. 191, pl. xxii, fig. 8, *V. lata*, p. 190, pl. xxii, fig. 6, *V. schloenbachi*, var. *interrupta* n. var., p. 190, pl. xxii, fig. 5, *V. strigillata*, p. 191, pl. xxii, fig. 7, Oolite, W. Australia, remarks on, id. (70); *V. mosquensis*, p. 30, pl. iii, figg. 18 & 19, *V. sp.*, p. 30, pl. iii, fig. 20, Jurassic, Memel, described, BRÜCKMANN (46).
- Virgulina*, its relation to *Bulimina* and *Bolivina*, p. 23, *V. schreibersiana*, a variety of, described, SILVESTRI (319) p. 22, 7 text-figg.

3. HELIOZOA.

Full account of the Heliozoa and "Pseudo-Heliozoa" of Lake Geneva and neighbourhood, with text-figg. of all species described; classification of genera and species, PENARD (262).

(a) *Aphrothoraca*:—

Actinophrys sol var. *fusca* n. var., Lake of Geneva, diagnosed, PENARD (262) p. 113, 5 figg.

Actinosphaerium arachnoideum n. sp., Lake of Geneva, diagnosed, PENARD (262) p. 137, 1 fig.; *A. eichhorni*, full description of cytological changes in, indicative of physiological degeneration, HERTWIG (138) pp. 307–342, pls. ix–xii; *A. e. varr. majus* n. var., Lake of Geneva, diagnosed, PENARD (262) p. 130, 1 text-fig.

(b) *Chlamydophora*:—

Astrodisculus laciniatus n. sp., p. 146, 1 fig., *A. zonatus* n. sp., p. 142, 1 fig., Lake Geneva, diagnosed, PENARD (262).

Heterophrys glabrescens n. sp., p. 161, 6 figg., *H. myriopoda* var. *holochlora* n. var., p. 154, 4 figg., Lake Geneva, diagnosed, PENARD (262).

(c) *Chalarothoraca*:—

Acanthocystis pelagica n. sp., occurrence and diagnosis, OSTENFELD (254) p. 4, figg. 4–7; *A. mimetica* n. sp., p. 229, 4 figg., *A. pantopoda* n. sp., p. 255, 1 fig., *A. rubella* n. sp., p. 232, 1 fig., Lake of Geneva, diagnosed, PENARD (262).

Lithocola flavescens n. sp., Lake Geneva, diagnosed, PENARD (262) p. 220, 1 fig.

Pompholyxophrys ovuligera n. sp., Lake Geneva, diagnosed, PENARD (262) p. 214, 1 fig.

Raphidiophrys ambigua n. sp., p. 179, 3 figg., *R. caerulea* n. sp., p. 187, 1 fig., *R. intermedia* n. sp., p. 183, 1 fig., *R. symmetrica* n. sp., p. 181, 1 fig., Lake Geneva, diagnosed, PENARD (262); *R. marina* n. sp., occurrence and diagnosis, OSTENFELD (254) p. 4, figg. 1–3.

Raphidocystis n. g., p. 189, *R. glutinosa* n. sp., p. 199, 3 figg., *R. stellata* n. sp., p. 191, 3 figg., *R. tubifera* n. sp., p. 193, 1 fig., Lake Geneva, diagnosed, PENARD (262).

(d) *Desmothoraca*:—

Choanocystis n. g., *lepidula* n. sp., Lake Geneva, diagnosed, PENARD (262) p. 288, 1 fig.

Hedriocystis reticulata n. sp., Lake Geneva, diagnosed, PENARD (262) p. 284, 4 figg.

4. RADIOLARIA.

(a) *Peripylaria*:—

†*Acanthosphaera parvula*, Miocene, Maryland, diagnosed, MARTIN (228) p. 458, pl. cxxx, fig. 21.

†*Cannartidium* sp., Miocene, Maryland, note on, MARTIN (228) p. 456, pl. cxxx, fig. 18.

†*Cannartiscus amphicylindricus*, p. 457, pl. cxxx, fig. 19, *C. marylandicus* n. sp., p. 457, pl. cxxx, fig. 20, Miocene, Maryland, diagnosed, MARTIN (228).

†*Cenosphaera porosissima*, Miocene, Maryland, diagnosed, MARTIN (228) p. 459, pl. cxxx, figg. 24 & 25.

Collozoum inerme, plankton, Capri, LO BIANCO (205) p. 58, pl. xxxvii, fig. 158.

- +*Dictyocoryne profunda*, Miocene, Maryland, diagnosed, MARTIN (228) p. 454, pl. cxxx, figg. 11-13.
- +*Hexalonche microsphaera*, Miocene, Maryland, diagnosed, MARTIN (228) p. 458, pl. cxxx, fig. 22.
- +*Hexastylus simplex*, Miocene, Maryland, diagnosed, MARTIN (228), p. 459, pl. cxxx, fig. 23.
- +*Phacodiscus calvertanus* n. sp., Miocene, Maryland, diagnosed, MARTIN (228) p. 456, pl. cxxx, fig. 17.
- +*Porodiscus concentricus*, Miocene, Maryland, diagnosed, MARTIN (228) p. 455, pl. cxxx, fig. 16.
- +*Rhopalodictyum calvertense* n. sp., p. 455, pl. cxxx, fig. 15, *R. marylandicum* n. sp., p. 455, pl. cxxx, fig. 14, Miocene, Maryland, diagnosed, MARTIN (228).
- Sphaerozoum punctatum*, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 159.
- +*Spongasteriscus marylandicus* n. sp., Miocene, Maryland, diagnosed, MARTIN (228) p. 453, pl. cxxx, fig. 10.
- Spongosphæra streptacantha*, in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 165.
- Thalassicolla pelagica*, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 160.

(b) **Acantharia:—**

- The *Acanthometrea*, classification of the group, many alterations and amplifications suggested, POPOFSKY (270) pp. 28-45; occurrence and description, id. pp. 47-115; nature of skeleton and hydrostatic apparatus in, fully described, illustrated from various genera (*Acanthometra*, *Amphilonche*, *Acanthonia*, etc.), SCHEWIAKOFF (303) 40 pp., 4 pls.
- Acanthapophysia* n. subg. (of *Acanthometron*) diagnosed, POPOFSKY (270) p. 64.
- Acanthochiasma cruciata*, p. 52, pl. iv, fig. 2, *A. decacantha* n. sp., p. 53, *A. bicuspidata* n. sp., p. 53, pl. v, fig. 1, *A. plana* n. sp., p. 53, pl. iv, fig. 7, *A. torta* n. sp., p. 54, pl. iv, fig. 6, *A. quadrangula* n. sp., p. 54, pl. iv, fig. 4, *A. hertwigi* n. sp., p. 54, pl. iv, fig. 5, occurrence and diagnoses, POPOFSKY (270).
- Acanthochiasmium* n. subg. (of *Acanthochiasma*) diagnosed, POPOFSKY (270) p. 51.
- Acanthochiasmidium* n. subg. (of *A.*) diagnosed, POPOFSKY (270) p. 53.
- Acanthochiasmonium* n. subg. (of *A.*) diagnosed, POPOFSKY (270) p. 54.
- Acantholonche* n. subg. (of *Amphilonche*) diagnosed, POPOFSKY (270) p. 113.
- Acanthometra* sp., in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 162; [see also under *Acanthometron*].
- Acanthometridæ* (sensu nov.) diagnosed, POPOFSKY (270) p. 59.
- Acanthometron* n. subg., diagnosed, POPOFSKY (270) p. 60.
- Acanthometron* (as genus = *Acanthometra*) p. 60, *A. bifidum*, p. 62, pl. iii, fig. 7, *A. cordiforme* n. sp., p. 62, pl. vi, fig. 2, *A. sphaericum* n. sp., p. 62, pl. vi, fig. 1, *A. piriforme* n. sp., p. 63, pl. v, fig. 5, *A. armatum* n. sp., p. 64, pl. iv, fig. 3, *A. arachnoide* n. sp., p. 64, pl. vi, fig. 4, *A. spinosum* n. sp., p. 66, pl. viii, fig. 5, occurrence and diagnosis, POPOFSKY (270).
- Acanthonia* n. subg. diagnosed, POPOFSKY (270) p. 84.
- Acanthonia* (sensu nov.) *abscisa* n. sp., p. 86, *A. quadricorna* n. sp., p. 89, pl. vii, fig. 6, occurrence and diagnoses, POPOFSKY (270).
- Acanthonidæ* n. fam., diagnosis, POPOFSKY (270) p. 84.
- Acanthonidium* n. g., p. 91, *A. echinoides*, p. 91, pl. i, fig. 2, *A. claparedi*, p. 91, pl. i, fig. 3, *A. acutum* n. sp., p. 93, pl. vii, fig. 7, *A. astroide* n. sp., p. 99, pl. vii, fig. 8, *A. tetrapterum*, p. 100, pl. vii, fig. 9, occurrence and diagnoses, POPOFSKY (270).

- Acanthoptera* n. g., p. 104, for *A. (Lithoptera) mülleri*, p. 104, *A. (L.) decaoptera*, p. 104, pl. viii, fig. 4, diagnoses, POPOFSKY (270).
Acolonche n. subg. (of *Acanthonia*) diagnosis, POPOFSKY (270) p. 90.
Actinastridae n. fam., diagnosed, POPOFSKY (270) p. 57.
Actinelius minimus n. sp., diagnosis and occurrence, POPOFSKY (270) p. 49.
Amphiacantha n. subg. (of *Acanthonidium*) diagnosis, POPOFSKY (270) p. 100.
Amphilonche n. subg. p. 106, diagnosis, POPOFSKY (270).
Amphilonche (genus) *belonoides*, p. 107, pl. x, figg. 1 & 2, *A. pertenuis* n. sp., p. 108, pl. viii, fig. 8, pl. x, fig. 10, *A. elongata*, p. 109, pl. x, figg. 3-6, pl. ix, fig. 4, *A. heteracantha*, p. 109, pl. x, figg. 7-9, *A. quadrialata* n. sp., p. 109, pl. x, fig. 13, *A. atlantica* n. sp., p. 110, pl. iii, figg. 1-6, *A. anomala*, p. 110, pl. ix, fig. 7, *A. nodulosa* n. sp., p. 111, pl. vii, figg. 9 & 10, *A. mira* n. sp., p. 111, pl. ix, fig. 8, pl. x, fig. 12, *A. amphihastata* n. sp., p. 112, pl. viii, fig. 7, *A. biformis* n. sp., p. 113, pl. ii, fig. 8, *A. rara* n. sp., p. 113, pl. ix, fig. 6, occurrence and diagnoses, POPOFSKY (270).
Amphilonchidium ellipsoide n. sp., p. 114, pl. viii, fig. 11, pl. ix, fig. 5, *A. haeckeli* n. sp., p. 115, pl. ix, fig. 3, *A. nationalis* n. sp., p. 114, pl. x, fig. 11, occurrence and diagnoses, POPOFSKY (270).
Amphimetron n. subg. (of *Acanthometron*) diagnosed, POPOFSKY (270) p. 65.
†*Lithasteriscus radiatus*, Miocene, Maryland, note on, MARTIN (228) p. 453, pl. cxxx, fig. 9.
Lithoptera n. subg., diagnosed, POPOFSKY (270) p. 103.
Lithoptera (genus) *fenestrata*, p. 103, pl. viii, fig. 3, occurrence and diagnosis, POPOFSKY (270).
Phyllolonche n. subg. (of *Phyllostaurus*) diagnosed, POPOFSKY (270) p. 68.
Quadrinetron n. subg. (of *Acanthometron*) p. 64, diagnosed, POPOFSKY (270).
Quadristaurus n. subg. (of *Acanthonia*) diagnosed, POPOFSKY (270), p. 90.
Rosetta n. g., p. 55, *R. elegans* n. sp., p. 56, pl. v, fig. 3, *R. triangularis* n. sp., p. 56, pl. v, fig. 2, occurrence and diagnoses, POPOFSKY (270).
Rosettidae n. fam., diagnosed, POPOFSKY (270) p. 55.
Stellacantha n. subg. (of *Acanthonidium*) diagnosed, POPOFSKY (270) p. 99.
Stellolonche n. subg. (of *Zygacantha*) diagnosed, POPOFSKY (270) p. 75.
Trizona n. g., p. 56, *T. brandti* n. sp., p. 56, pl. v, fig. 4, occurrence and diagnoses, POPOFSKY (270).
Trizonidae n. fam., diagnosed, POPOFSKY (270) p. 56.
Zygacantha n. subg., diagnosed, POPOFSKY (270) p. 71.
Zygacantha (genus) *latifolia* n. sp., p. 71, pl. vi, figg. 6 & 7, *Z. concreta* n. sp., p. 72, pl. v, fig. 6, *Z. septentrionalis* n. sp., p. 72, *Z. rotunda* n. sp., p. 75, *Z. elegans* n. sp., p. 75, pl. ix, fig. 2, occurrence and diagnoses, POPOFSKY (270).
Zygacanthidae n. fam., diagnosed, POPOFSKY (270) p. 69.
Zygacanthidium longum n. sp., p. 76, pl. vii, fig. 3, *Z. hastatum* n. sp., p. 77, pl. vii, fig. 4, *Z. gladiusum* n. sp., p. 77, pl. vii, fig. 1, *Z. atlanticum* n. sp., p. 83, pl. vii, fig. 5, occurrence and diagnoses, POPOFSKY (270).
Zygapophysia n. subg. (of *Zygacantha*), diagnosed, POPOFSKY (270) p. 73.
Zygonlonche n. subg. (of *Amphilonche*) diagnosed, POPOFSKY (270) p. 112.
Zygotonchidium n. subg. (of *Amphilonchidium*) diagnosed, POPOFSKY (270) p. 114.
Zygoptera n. g., p. 104, for *Z. (Lithoptera) quadrata*, p. 104, pl. viii, fig. 5, diagnosed, POPOFSKY (270).

(c) **Monopylaria:**—

- †*Anthocyrtium doricum*, Miocene, Maryland, diagnosed, MARTIN (228) p. 451, pl. cxxx, fig. 8.
†*Eucyrtidium calvertense* n. sp., Miocene, Maryland, diagnosed, MARTIN (228) p. 450, pl. cxxx, fig. 5.

- †*Lithocampe marylandica* n. sp., Miocene, Maryland, diagnosed, MARTIN (228) p. 450, pl. cxxx, fig. 4.
 †*Stichocapsa macropora*, Miocene, Maryland, diagnosed, MARTIN (228) p. 451, pl. cxxx, figg. 6 & 7.

(d) *Tripylaria* or *Phæodaria* :—

- Tripylaria* from Atlantic plankton, notes on, BORGERT (28); found by the German Deep-sea Expedition, general account of, HÄCKER (132) pp. 122–156.
- Aulacantha*, p. 47, *A. scolymantha*, p. 47, pl. i, figg. 1–3, occurrence and description, IMMERMANN (148); *A. s.*, in plankton, Capri, LO BIANCO (205) p. 58, pl. xxxvii, fig. 161.
- Aulacanthidae*, description and classification of the family, IMMERMANN (148) pp. 35–39.
- Aulastrum meridionale* n. sp., Atlantic plankton, diagnosed, BORGERT (28) p. 737, fig. c.
- Aulatractus* (?) *proteus*, Atlantic plankton, note on, BORGERT (28) p. 736, fig. b.
- Auloceros*, p. 49, *A. arborescens* var. *dichodendrum* n. var., p. 51, pl. v, figg. 11 & 12, *A. spathillaster* var. *birameus* n. var., p. 50, pl. v, fig. 10, occurrence and description, IMMERMANN (148).
- Aulocoryne*, p. 58, *A. candelabrum*, p. 59, pl. vi, figg. 5–7, *A. dentata*, p. 59, pl. vi, fig. 8, *A. pulvinata*, p. 60, pl. vi, fig. 9, *A. zetesios*, p. 61, pl. vii, fig. 1, occurrence and description, IMMERMANN (148).
- Aulographis*, p. 52, *A. pandora*, p. 53, pl. v, fig. 6, *A. tetrancistra*, p. 56, pl. v, fig. 7, *A. tridactylus* n. sp., p. 55, pl. v, fig. 9, *A. uncinata* n. sp., p. 55, pl. v, fig. 8, occurrence and description, IMMERMANN (148).
- Aulokleptes* Immern., p. 39, *A. corona* n. sp., p. 41, pl. vi, fig. 1, *A. flosculus* var. *pistillum* n. var., p. 42, pl. v, fig. 1, var. *inermis* n. var., p. 42, pl. iii, fig. 1, var. *tridentatus* n. var., p. 43, pl. vi, fig. 3, var. *typicus* n. var., p. 43, pl. v, fig. 2, pl. vi, fig. 2, var. *confluens* n. var., p. 43, pl. vi, fig. 4, *A. gemmascens*, p. 44, var. *bi(tri-)partitus* n. var., p. 44, pl. v, fig. 3, var. *typicus* n. var., p. 44, pl. v, fig. 4, var. *sceptrum* n. var., p. 45, pl. v, fig. 5, *A. ramosus* n. sp., p. 45, var. *longispina* n. var., p. 46, pl. iii, figg. 4 & 5, pl. iv, figg. 1–3, var. *multituberculatus* n. var., p. 46, pl. iii, fig. 3, occurrence and description, IMMERMANN (148).
- Aulophyton* n. g., p. 57, *A. tetronyx* n. sp., p. 57, pl. vi, fig. 10, occurrence and description, IMMERMANN (148).
- Aulospathis*, p. 62, *A. bifurca*, p. 62, pl. vii, fig. 2, *A. monodon* n. sp., p. 63, pl. vii, fig. 3, *A. triodon*, p. 64, pl. vii, fig. 4, occurrence and description, IMMERMANN (148); *A. pinus* n. sp., diagnosed, p. 127, fig. 3, *A. variabilis*, notes on the different subspp. or varieties of, p. 125, fig. 2, HÄCKER (132).
- Aulosphaera* sp., in plankton, Capri, LO BIANCO (205) p. 59, pl. xxxviii, fig. 166.
- Cadium inauris* n. sp., Atlantic plankton, diagnosed, BORGERT (28), p. 747, fig. o.
- Castanarium schütti* n. sp., Atlantic plankton, diagnosed, BORGERT (28) p. 750.
- Castanissa dahl* n. sp., p. 752, *C. hanseni* n. sp., p. 751, fig. p, Atlantic plankton, diagnosed, BORGERT (28).
- Challengeria naresii*, fig. 4a, *C. thomsoni*, fig. 4c, *C. tridens*, fig. 4d, *C. xiphodon*, fig. 4b, notes on, HÄCKER (132) p. 134.
- Challengeron radians* n. sp., p. 743, fig. j, *C. sp.*, p. 744, fig. k, Atlantic plankton, notes on, BORGERT (28); *C. willemesii*, notes on, HÄCKER (132) p. 136, figg. 5a–c.
- Calechinus* n. g., a form intermediate between the *Calodendridæ* and the

- Cælographidæ*, for *C. wapiticornis* n. sp., diagnosed, HÄCKER (132) p. 123, fig. 1.
- Cælodendrum gracillimum*, p. 59, pl. xxxviii, fig. 163, *C. ramosissimum*, p. 59, pl. xxxviii, fig. 164, in plankton, Capri, LO BIANCO (205).
- Conchellium lenticula* n. sp., Atlantic plankton, diagnosed, BORGERT (28) p. 753, fig. q.
- Conchidium argiope*, p. 755, fig. r, *C. caudatum*, p. 756, fig. s, Atlantic plankton, diagnosed, BORGERT (28); *C. rhynchonella*, note on, HÄCKER (132) p. 136, fig. 7.
- Conchopsis* sp., note on, HÄCKER (132) p. 136, fig. 6.
- †*Dictyocha fibula* (?), Miocene, Maryland, diagnosed, MARTIN (228) p. 449, pl. cxxx, fig. 3.
- †*Distephanus crux*, Miocene, Maryland, diagnosed, MARTIN (228) p. 448, pl. cxxx, figg. 1 & 2.
- Entocannula circularis*, p. 745, fig. l, *E. infundibulum*, p. 745, fig. m, Atlantic plankton, notes on, BORGERT (28).
- Gazelletta* cf. *viridis*, notes on the anatomy of, compared with that of *Planktonetta*, FOWLER (113) pp. 483-488, 3 text-figg.
- Pharyngella gastrula*, Atlantic plankton, note, BORGERT (28) p. 746, fig. n.
- Protocystis alata* n. sp., p. 739, fig. e, *P. gravida* n. sp., p. 741, fig. g, *P. nautiloides* n. sp., p. 738, fig. d, *P. tridentata* n. sp., p. 742, fig. h, *P. varians* n. sp., p. 740, fig. f, Atlantic plankton, diagnoses, BORGERT (28).
- Sagenoarium* sp., Atlantic plankton, note on, BORGERT (28) p. 735, fig. a.
- Tuscaridium luciae* n. sp., diagnosis and note, HÄCKER (132) pp. 140 & 149, fig. 8.
- Tuscarora bisternaria*, p. 141, fig. 9, *T. braueri* n. sp., p. 143, fig. 11, var. *triangula* n. var., p. 143, fig. 11a, *T. campanella* n. sp., p. 143, fig. 13, *T. galeata* n. sp., p. 145, fig. 12, *T. nationalis* n. sp., p. 142, fig. 18, *T. scutellum* n. sp., p. 143, fig. 10, occurrence and diagnoses, HÄCKER (132).
- Tuscarusa æronauta* n. sp., p. 146, fig. 16, *T. ampulla* n. sp., p. 147, fig. 15, *T. chuni* n. sp., p. 148, fig. 17, *T. globosa* n. sp., p. 142, *T. passercula* n. sp., p. 145, fig. 14, occurrence and diagnoses, HÄCKER (132).

C. SPOROZOA.

- A Sporozoan, unidentified (either a Coccidian or a Gregarine), occurrence and note on, LÉGER (183) p. 847.
- A new Sporozoan parasite of uncertain affinity, *Lymphocystis* n. g. *johnstonei* n. sp., occurrence and preliminary description of, WOODCOCK (362) pp. 63-72, pl. 3.

1. TELOSPORIDEA.

(a) Gregarinidea:—

- Comparative account of development and growth in the Gregarines; their classification according to habitat, LÜHE (209) pp. 88-198, 31 text-figg.
- Cystobia irregularis* and *C. minchinii* n. sp., habitat, occurrence and precocious association, or "neogamy," briefly described, WOODCOCK (364) pp. 125-128.
- Diplocystis clerici* n. sp., short description of, LÉGER (189) pp. 360 & 361, text-figg. 3-5.
- Doliocystis pellucida*, attachment to intestinal host-cell described, BRASIL (41) pp. 233 & 234, text-figg. 20-22.

Gregarina cuneata, p. 357, text-figg. 5 & 7, *G. polymorpha*, p. 355, fig. 6, notes on development of, LÉGER & DUBOSCQ (192); *G. marteli* n. sp., occurrence and short account of, LÉGER (189) pp. 358-360, text-figg. 1 & 2; *G. ovata*, general account of, PAEHLER (256) pp. 64-87, pls. v & vi.

Steinina ovalis, growth and development of, LÉGER & DUBOSCQ (192) p. 352, text-figg. 3 & 4.

Stenophora aculeata n. sp., p. 368, pl. xiv, figg. 5, 14, *S. chordeumæ* n. sp., p. 372, pl. xiv, figg. 11 & 15, *S. juli* (Frantz.), p. 363, pl. xiv, figg. 1-3, 13, *S. polyxeni* L. & D., p. 370, pl. xiv, fig. 6, *S. producta* n. sp., p. 375, pl. xiv, figg. 7-10, *S. silene* n. sp., p. 371, pl. xiv, figg. 4, 12, habitat and development described, LÉGER & DUBOSCQ (192).

Stylorhynchus longicollis, pl. xiv, *S. oblongatus*, pl. xv, sexual conjugation fully described in, LÉGER (188) pp. 303-357, also 8 text-figg.; *S. l.*, pp. 336-344, pl. xiii, figg. 1-16, text-figg. 1 & 2, *S. oblongatus*, pp. 344-350, pl. xiii, figg. 17-28, development and growth described, LÉGER & DUBOSCQ (192).

Urospora lagidis, description of trophic and sporulating phases, BRASIL (41) pp. 213-225, pl. viii, figg. 70-80, text-figg. 18.

(b) Coccidiidea:—

Adalea transita n. sp., life-cycle partly described, LÉGER (189) pp. 361-365, text-figg. 6 & 7.

Angeiocystis n. g. *audouinii* n. sp., occurrence and brief description, BRASIL (40) pp. 645 & 646.

Klossiella muris Smith and Johnson, redescribed; its schizogony compared with that of *Caryotropha mesnili*, WOODCOCK (363) pp. 153-163, 2 text-figg.

(c) Hæmosporidia:—

Hæmocystidium n. g. *simondi* n. sp., occurrence and diagnosis, CASTELLANI & WILLEY (63) p. 84, figg. 10-16.

Halteridium danilevskyi, occurrence and note on, CASTELLANI & WILLEY (63) p. 83, figg. 7-9; *H. noctuæ*, see under *Trypanosoma* n.

Hæmogregarina biretorta n. sp., diagnosis and occurrence, NICOLLE (249) pp. 912-914, 8 text-figg.; *H. sergentium* n. sp., diagnosis and occurrence, id. (248) pp. 608 & 609; *H. tunisiensis* n. sp., diagnosis and occurrence, id. (247) pp. 330-332; *H. bagensis* n. sp., diagnosis and occurrence, DUGLOUX (88) pp. 564 & 565; *H. b.*, further notes on, BILLET (23) pp. 602 & 603, 8 text-figg.; *H. curvirostris* n. sp., diagnosis and occurrence, id. (24) pp. 741-743, 10 text-figg.; *H. tunisiensis*, notes on, id. (21) pp. 482-484, 8 text-figg.; *H. (Karyolysus) viperini* n. sp., occurrence and diagnosis, id. (22) pp. 484 & 485, 6 text-figg.; *H. callionymi* n. sp., p. 614, *H. cotti* n. sp., p. 614, *H. blanchardi* n. sp., p. 614, *H. gobii* n. sp., p. 615, and *H. quadrigemina* n. sp., p. 615, occurrence and diagnosis, BRUMPT & LEBAILLY (50); *H. flesi* n. sp., p. 577, *H. laternæ* n. sp., p. 577, and *H. platessæ* n. sp., p. 576, occurrence and diagnoses, LEBAILLY (179); *H. mauritanica* n. sp. (near to *H. stepanovi*), from a land tortoise, described, SERGENT (314) pp. 130 & 131; *H. mirabilis* n. sp., p. 86, figg. 28-38, *H. nicoriæ* n. sp., p. 85, figg. 17-27, occurrence and diagnoses, CASTELLANI & WILLEY (63); *H. psammodromi* n. sp., allied to *H. sergentium*, described, SOULIÉ (327) pp. 371-373.

Helcosoma n. g. *tropicum* n. sp., name proposed for the parasite of Delhi boil, Oriental sore, etc. [closely allied to *Piroplasma donovani*]; description of, and relation to host's tissues, WRIGHT (367) pp. 472-482, 4 pls.; notes on the same parasite (regarded as a *Piroplasma*), MESNIL, NICOLLE & REMLINGER (235) pp. 167-169.

- "*Leishmania*" **nom. nov.** proposed for the Leishman-Donovan parasite of Dum-dum fever [*Piroplasma donovani*], ROSS (289) pp. 79-82, 1 pl.
- "*Leucocytozoon*" *danilewskyi*, distinction of male and female forms in, BERESTNEFF (18) pp. 381-386, pl. xv.
- Piroplasma bigeminum*, p. 349, *P. canis*, p. 351, *P. equi*, p. 350, and *P. ovis*, p. 349, occurrence in Spanish animals and notes on, DIAZ VILLAR (82); *P. donovani*, relation to leucocytes and blood-corpuscles, excellent figures of, DONOVAN (83) 1 pl.; *P. d.*, minute forms, free or endoglobular, in peripheral circulation, LAVERAN & MESNIL (173) pp. 187-189; *P. d.*, (the "Leishman-Donovan bodies") development of a flagellate (Trypanosome) phase in, in cases of Kala-Azar, etc., ROGERS (286) pp. 367-377, pl. xxv; *P. hominis* **n. sp.**, causing "spotted fever" or tick-fever in man, description of, WILSON & CHOWNING (360) pp. 46-48, pl. ii.

2. NEOSPORIDIA.

(a) Myxosporidia:—

- Glugea* [= *Nosema*] *anomala*, general description of growth and development in, STEPELL (336) pp. 1-42, pls. i-iii; *G. caeculie* **n. sp.**, p. 646, fig. 16, *G. halesidotidis* **n. sp.**, p. 645, fig. 15, *G. heliotidis* **n. sp.**, p. 645, fig. 14, *G. hydrie* **n. sp.**, p. 646, fig. 26, *G. micrattaci* **n. sp.**, p. 646, fig. 27, from Brazilian Lepidoptera, notes on spores, LUTZ & SPLENDRE (213); *G. stephani*, description of, chiefly with regard to the nature of the parasitic invasion, WOODCOCK (361) pp. 126-142, pl. ii.
- Lentospora* **nom. nov.** for *Myxobolus cerebralis* Hofer, occurrence, diagnostic characters and description of, PLEHN (269) pp. 145-166, pl. v, 7 text-figg.

Nosema, see under *Glugea*.

- Sphaerospora platessæ* **n. sp.**, occurrence and diagnosis, WOODCOCK (361) p. 60, pl. ii, fig. 7d.
- Thelohanania legeri* **n. sp.**, description and development of spores, HESSE (140) pp. 570 & 571 and (141) pp. 571 & 572, 10 text-figg.; *T. mænadis* **n. sp.**, account of, and nuclear division in, PEREZ (263) pp. 214 & 215.

(b) Actinomyxidæ:—

- Sphaeractinomyxon* **n. g.** *stolci* **n. sp.**, description and development of, CAULLERY & MESNIL (64) pp. 408-410.
- Triactinomyxon*, notes on the genus, LÉGER (183) pp. 846 & 847; *T. ignotum*, sporulation of, described, LÉGER (182) pp. 844-846, 4 text-figg.

(c) Sarcosporidia:—

- Sarcocystis tenella bubali* [probably *S. siamensis* Linstow], occurrence in buffaloes and notes on, WILLEY, CHALMERS & PHILIP (359), pp. 65-72, 2 figg.

SPOROZOA INCERTÆ SEDIS.

Serosporidia:—

- Cytoryctes variolæ*, detailed account of life-cycle, relationships, and relation to the lesions in small-pox of, CALKINS (58) pp. 136-167, pls. xvi-xix; scheme of the life-history, description of the cytoplasmic phases (the "vaccinia" form) of, TYZZER (345) pp. 214-219, 225 & 226, pl. xxvi.
- Fam. *Cytoryctidæ* **n. fam.**, defined, CALKINS (58). [See under II. F.]

Caryoryctes n. g. *cytoryctoides* n. sp., an intranuclear parasite of *Paramœcium*, description and relationships, CALKINS (58) pp. 164 & 165, pl. 20.

[For various enigmatical bodies (probably, as a rule, cell-inclusions) which their describers would include in the "Sporozoan lumber-room" see end of II. c. 2.]

D. MASTIGOPHORA.

1. FLAGELLATA (EUFLAGELLATA).

(a) Lissoflagellata:—

- Bodo lacerte*, full description of, PROWAZEK (278) pp. 19–32, pl. ii, figg. 43–50, pl. iii, pl. iv, figg. 82–87.
- Chlamydomonas communis* n. sp., pp. 374 & 388, fig. 1, *C. globosa* n. sp., pp. 375 & 389, *C. gracilis* n. sp., pp. 374 & 388, plankton, Lake Erie, diagnosed, SNOW (326).
- Chrysosphaerella longispina* Lemm., occurrence and note on, ZACHARIAS (368) p. 194, fig. 1.
- Dicercomonas*, distinction of the genus from *Hexamitus*, p. 130, *D. (H.) intestinalis*, p. 127, fig. 6, *D. muris*, p. 122, figg. 1–5, account of, FOA (109).
- Dinobyron cylindricum*, Ausgraben lakelets, Plön, notes on, LEMMERMANN (128) p. 306, figg. 2 & 3.
- Euglena deses*, note on, LORD (207) pp. 75 & 76, pl. iii, fig. 2.
- Herpetomonas muscae-domesticae*, full description of habitat and life-cycle, PROWAZEK (277) pp. 440–452, 7 text-figg.; *H. sarcophagæ* n. sp., occurrence and notes on, id. pp. 440 & 445; *H. subulata* n. sp., description and occurrence, LÉGER (186) pp. 613–615, 5 text-figg.; affinities of, with *H. (Crithidia) minuta*, LÉGER (187) p. 615.
- Hexamitus*. See under *Dicercomonas*.
- Jenia annectens*, description of, and processes of division in, GRASSI & FOA (126) pp. 241–253, 17 text-figg.
- Mallomonas acaroides*, occurrence and note on, ZACHARIAS (368) p. 205, fig. 3.
- Mastigamæba aspera*, occurrence and description, CASH (60) p. 220, pl. xxvi, figg. 3 & 4.
- Octomitus* [n. g. ?] *intestinalis* n. sp., occurrence and short description, PROWAZEK (278) pp. 38 & 39, pl. iv, fig. 107.
- Ocyglossa* n. g. *velox* n. sp., type of a new family allied to the *Chromomonadineæ*, brief description of, GIARD (116) p. 296.
- Phyllomitus amylophagus*, occurrence and note on, SMITH (325) p. 48.
- Spirochaeta* ("Hæmamæba") *ziemannii*, full account of, both in trypaniform and hæmosporidian phases, SCHAUDINN (301) pp. 429–435, 5 text-figg.
- Synura uvella*, occurrence and note on, ZACHARIAS (368) p. 200, fig. 2.
- Trichomastix lacertæ*, full account of life-cycle in, PROWAZEK (278) pp. 4–19, pl. i, pl. ii, figg. 20–42.
- Trichomonas intestinalis*, conjugation (heterogamy) in, notes on, PROWAZEK (278) pp. 34 & 35, pl. iv, figg. 93–102; *T. lacertæ* n. sp., occurrence and short account of; agreement in main features with *T. intestinalis*, id. pp. 32–34, pl. iv, figg. 88–92.
- Trichonympha agilis* Leidy, division in, described, FOA (110) pp. 618–625, 5 text-figg.
- Trypanophis* n. g. for *Trypanosoma grobbei*, redescribed, KEYSSELITZ (156), pp. 367–375, 3 text-figg.

Trypanoplasma borreli, redescription and affinities of, LÉGER (180) pp. 824 & 825 & (181) pp. 856–859, 5 text-figg.; *T. varium* n. sp., and its further evolution in a leech, described, id. (185) pp. 345–347; *T.* of the minnow (Léger [180]) is identical with *T. borreli* of the rudd, LAVERAN (172) p. 250.

Trypanosoma abramis n. sp., p. 388, *T. danilewskyi* n. sp., p. 386, 1 fig., *T. paddæ* n. sp., p. 361, *T. tinæ* n. sp., p. 387, 2 figg., occurrence and diagnoses, LAVERAN & MESNIL (176); *T. paddæ*, described, THIROUX (342) pp. 145–148, 5 text-figg.; *T. barbatulæ* n. sp. and its further development in a leech, described, LÉGER (184) pp. 344 & 345; *T. brucei*, artificial cultivation of, NOVY & McNEAL (251) pp. 1–30; *T. b.*, good account of morphology of (unfortunately unillustrated), SCHILLING (304) pp. 484–496; *T. callionymi* n. sp., p. 613, *T. cotti* n. sp., p. 613, *T. delagei* n. sp., p. 614, *T. gobi* n. sp., p. 613, *T. limandæ* n. sp., p. 614, occurrence and diagnoses, BRUMPT & LEBAILLY (50); the parasite of sleeping-sickness (*T. castellanii* Kruse, so-called) is undoubtedly identical with that of *T.*-fever (*T. gambiense* Dutton), hence the former name is not to be retained, BRUMPT & WURTZ (53) p. 573 [in any case it could not, as *T. ugandense* would take priority]; *T. dimorphon* Dutton & Todd, different forms of, described, LAVERAN & MESNIL (174) pp. 732–734, 7 text-figg.; *T. equiperdum*, notes on different forms and habitat of, LINGARD (204) pp. 537–547; *T. evansi*, evolution of, HOLMES (146) pp. 210–214, 2 pls.; *T. flesi* n. sp., p. 577, *T. laternæ* n. sp., p. 577, *T. platessæ* n. sp., occurrence and diagnoses, LEBAILLY (179); *T. granulorum* (from the eel), multiplication of, SABRAZES & MURATET (295) p. 67, behaviour in sera and other liquids, id. (296) p. 159; *T. inopinatum* n. sp., from the green frog, described, SERGENT (313) pp. 123 & 124; *T. i.*, its probable ontogenetic connection with a *Drepanidium*, BILLET (20) pp. 574–576, and (26) pp. 161–163, 16 text-figg.; *T. lewisi*, observations on, BYLOFF (54) pp. 111–138, 2 pls.; *T. nelspruitense* n. sp., occurrence and description, LAVERAN (171) pp. 158–160, 2 text-figg.; *T. (Halteridium) noctuæ*, full account of, both in trypaniform and hæmosporidian phases, SCHAUDINN (301) pp. 390–429, 15 text-figg.; *T. theileri* (?), occurrence in German East Africa and remarks on, PANSE (257) pp. 376–378, 1 fig.; *T. ugandense* Castellani, is undoubtedly identical (and therefore synonymous) with *T. gambiense* Dutton, LAVERAN (165) pp. 841–844.

A Trypanosome sp. indet., noted in a rabbit, brief remarks on, PETRIE (266) pp. 484–486.

(b) **Choanoflagellata**:—Vacant.

2. SILICOFLAGELLATA.

Vacant.

3. DINOFLAGELLATA.

(a) **Adinida**:—Vacant.

(b) **Dinifera**:—

Ceratium hirundinella, plankton, Alpine lakelets, notes on, BREHM & ZEDERBAUER (42) pp. 640 & 643, figg. 4 & 5; *C. h.*, Ausgraben lakelets, Plön, note on, LEMMERMAN (198) p. 308, figg. 4–14; *C. macroceros*, p. 122, fig. 2, *C. tripos* var. *arcuatum*, p. 122, figg. 3–5, *C. t.* var. *bucephalum*, p. 125, fig. 13, *C. flagelliferum*, p. 123, figg. 6 & 7, *C. f.* var. *filiformis* n. var., p. 123, fig. 11, *C. contortum*, p. 124, fig. 9, *C. platycorne*, p. 124, fig. 10, *C. arcticum*, p. 125, fig. 14, *C. furca*, p. 126,

- figg. 15 & 17-19, *C. belone*, p. 126, fig. 16, *C. gravidum*, p. 127, fig. 21, *C. lineatum*, p. 127, fig. 20, *C. fusus*, p. 127, figg. 22 & 23, var. *concava*, p. 128, fig. 24, var. *stricta* n. var., p. 128, fig. 25, occurrence, Japanese Seas, and notes, OKAMURA & NISHIKAWA (253).
Glenodinium bipes n. sp., occurrence, Iceland, and diagnosis, PAULSEN (258) p. 21, figg. 3 & 4.
Goniodoma ostenfeldii n. sp., occurrence and diagnosis, PAULSEN (258) p. 20, text-fig. 2.
Gonyaulax triacantha, occurrence and note on, PAULSEN (258) p. 22, fig. 5.
Heterocapsa triquetra, occurrence and note on, PAULSEN (258) p. 22, fig. 6.
Peridinium decipiens, p. 24, fig. 11, *P. islandicum* n. sp., p. 23, fig. 7, *P. ovatum*, p. 23, fig. 8, *P. roseum* n. sp., p. 23, fig. 9, *P. subinermis* n. sp., p. 24, fig. 10, occurrence and notes on, PAULSEN (258).

4. RHYNCHOFAGELLATA.

Noctiluca miliaris, note on abundant occurrence of, BROWNE (45) p. 121.

E. CILIOPHORA.

Fossil Infusoria (allied to *Cinetoconia*) from Coal-measures, described, RENAULT (284) pp. 25-27, pl. A.

1. CILIATA.

Ciliates, remarks on the ultimate protoplasmic structure of, FAURÉ (97) pp. 124 & 125.

(a) Holotricha:—

- Anoplophrya brasili* n. sp., occurrence and note on, LÉGER & DUBOSCQ (193) p. 98; *A. b.*, described, id. (194) pp. 337-343, 2 text-figg.; *A. mytili*, note on, and its systematic position, RAYMOND (281) pp. 215 & 216, 2 text-figg.
Anophrys echini n. sp., occurrence and description, DI MAURO (231) pp. 13-19, 3 text-figg.
Blepharostoma pigerrima, occurrence and note on, SMITH (325) p. 51.
Chilodon notamoebos n. sp., described, MAGINZKY (217) pp. 1-5, 1 pl., 6 text-figg.
Dileptus gigas, hunger-periods and conjugation in, HERTWIG (139) pp. 1-3.
Discophrya gigantea, from hind-gut of *Discoglossus pictus*, general description of, COHN (77) pp. 43-53, pl. iv, figg. 1-8.
Lembus velifer, note on, SMITH (325) p. 50; (Smith would include in this sp., *L. infusionum*, *intermedius*, *ornatus* and *striatus*).
Loxodes rostrum, note on nuclei of, SMITH (325) p. 49.
Nassula sp., parasitic in cells of *Valonia*, a Siphonaceous Alga, KÜSTER (162) pp. 384-390.
Opalina intestinalis, from hind-gut of *Discoglossus pictus*, account of, COHN (77), pp. 53-62, pl. iv, figg. 9-17; *O. ranarum*, curious abnormal (?) individual of, id. p. 56, pl. iv, figg. 18 & 19; *O. ranarum*, occurrence of nuclear changes in, which are considered to represent the differentiation of a micronuclear element, LOEWENTHAL (206) pp. 387-390, 10 text-figg.; *O. saturnalis* n. sp., occurrence and note on, LÉGER & DUBOSCQ (193) p. 99; *O. s.*, described, id. (195) pp. 343-356, pl. xiv.
Paramoecium bursaria, conjugation in, described, HAMBURGER (134) pp. 199-239, pls. vii-ix, 2 text-figg.; *P. caudatum*, photographs illustrative of, under different physiological conditions, CALKINS (56), 3 pls.; *P.*, basal corpuscles as points of attachment for the vibratile organellæ of, MITROPHANOW (238) pp. 167-169, figg. 3 & 4; trichocysts of, structure

and function, id. (239) pp. 78-91, 9 figg., and (241) pp. 1-18, 9 text-figg.

(b) **Heterotricha:**—

- Cyttarocyclus* [*Codonella*] *annulifera*, p. 128, fig. 9, *C. claparedei*, p. 125, fig. 3, *C. markusovskiyi*, p. 125, figg. 4-6, *C. orthoceras*, p. 128, figg. 10-23, *C. spiralis*, p. 125, fig. 2, *C. subulatus*, p. 128, figg. 7 & 8, occurrence and notes on, ENTZ (93).
Dictyocysta templum, p. 130, figg. 24-29, occurrence and note on, ENTZ (93).
Petalotricha [*Codonella*, *Cyttarocyclus*?] *ampulla*, p. 132, figg. 30-36, occurrence and note, ENTZ (93).
Spirostomum ambiguum, localization of respiration in the cytoplasm of, VERWORN (351) pp. 566-569.
Stentor ceruleus, effects on metabolism and division in, of different salts and nutritive conditions, PETERS (265) pp. 441-516.
Tintinnopsis karajacensis var. *acuta* n. var., occurrence and note, PAULSEN (258) p. 24, fig. 12.
Tintinnus fraenoid and *T. inquilinus*, structural details and multiplication of, SHVEIER (316) pp. 158-160, 164.

(c) **Hypotricha:**—

Gonostomum pediculiforme, note on, SMITH (325) p. 52.

(d) **Peritricha:**—

- Carchesium aselli*, structure of contractile stalk in, FAURÉ (98) pp. 19 & 20.
Epistylis gasterostei n. sp., *E. daphniae* n. sp., note on structure of peduncle in, FAURÉ (101) p. 506.
Intranstylum n. g. founded on structure of peduncle in certain forms; *I. gammari* n. sp., *I. aselli* (*Carchesium a.*), structure of fixative apparatus in, FAURÉ (101) pp. 506 & 507.
Opercularia clepsinis n. sp., a colonial form, occurrence and description, POW (271) pp. 340-343, 2 figg.; *O. fabrei* n. sp., p. 188, fig. 3, *O. gracilis* n. sp., p. 187, fig. 2, *O. kennedyi* n. sp., p. 183, fig. 1, *O. microdiscum* n. sp., p. 190, fig. 4, occurrence and description, FAURÉ (105); *O. naucoris* n. sp., and *O. stenostoma*, structure of contractile apparatus in, FAURÉ (99) pp. 576 & 577; *O. s.*, nuclear purification during division in, FAURÉ (103) p. 429.
Vaginicoline (*Cothurnia*, *Pyxicola*, *Vaginicola* etc.), structure and formation of the enveloping shell or "house," FAURÉ (104) pp. 551 & 552.
Vorticella citrina [see under *V. convallaria*]; *V. convallaria*, adipogenic process and formation of a pigment in, giving rise to a "*V. citrina*-" form, which is not, therefore, distinct, FAURÉ (102) pp. 390-392.
Vorticellidae, minute structure of protoplasm in, described, FAURÉ (96) pp. 764-766.

2. SUCTORIA (TENTACULIFERA).

Astrophrya n. g. *arenaria* n. sp., occurrence and description, AVERINTZEV (6) pp. 425 & 426, 1 text-fig.

CORRIGENDUM : Protozoa 1903.

p. 45. "*Lysioptetalum lactarium*—*G. calverti*, n. sp.", should be placed under Myriapoda and not under Insecta.

INDEX TO NAMES

OF

NEW GENERA AND SUBGENERA

MENTIONED IN VOLUME XLI,

INCLUDING NEW NAMES FOR GENERA PREVIOUSLY ESTABLISHED.*

- | | |
|--|--|
| <p>Acalyptops, <i>Hartmann</i>, Ins. 171
 Acanthapophysia, <i>Popofsky</i>, Prot. 51
 Acantherus, <i>Scudder</i>, Ins. 359
 Acanthidiellum, <i>Kirkaldy</i>, Ins. 315
 Acanthochiasmarium, <i>Popofsky</i>, Prot. 51
 Acanthochiasmidium, <i>Popofsky</i>, Prot. 51
 Acanthochiasmonium, <i>Popofsky</i>, Prot. 51
 Acantholobus, <i>Hancock</i>, Ins. 359
 Acantholonche, <i>Popofsky</i>, Prot. 51
 Acanthometopon, <i>Ashmead</i>, Ins. 226
 Acanthometron, <i>Popofsky</i>, Prot. 51
 Acanthomima, <i>Kirby</i>, Ins. 355
 Acanthonia, <i>Popofsky</i>, Prot. 51
 Acanthonidium, <i>Popofsky</i>, Prot. 51
 Acanthopecten, <i>Girty</i>, Moll. 89
 Acanthoptera, <i>Popofsky</i>, Prot. 52
 Acatapaustus, <i>Bethune-Baker</i>, Ins. 254
 Acco, <i>Bethune-Baker</i>, Ins. 254
 Acheles, <i>Oudemans</i>, Arachn. 39
 Achoria, <i>Meyrick</i>, Ins. 292
 Aclemmysa, <i>Reitter</i>, Ins. 198
 Acocephalites, <i>Meunier</i>, Ins. 125
 Acolonche, <i>Popofsky</i>, Prot. 52
 Aconias, <i>Cameron</i>, Ins. 218
 Acrohyænodon, <i>Ameghino</i>, Mamm. 50
 Acromecis, <i>Mabille</i>, Ins. 251</p> | <p>Acropithecus, <i>Ameghino</i>, Mamm. 49
 Acrothoracica, <i>Gruvel</i>, Crust. 55
 Actenoptera, <i>Czerny</i>, Ins. 310
 Adiastulus, <i>Raffray</i>, Ins. 139
 Adosomus, <i>Faust</i>, Ins. 172
 Ægidinus, <i>Arrow</i>, Ins. 150
 Aella, <i>Mabille</i>, Ins. 251
 Æluroides, <i>Tullgren</i>, Ins. 210
 Æolocoris, <i>Reuter</i>, Ins. 324
 Afraniella, <i>Schouteden</i>, Ins. 315
 Afrorhytida, <i>Kobelt</i>, Moll. 61
 Agaleptus, <i>Gahan</i>, Ins. 186
 Agasicles, <i>Jacoby</i>, Ins. 190
 Agathispa, <i>Weise</i>, Ins. 196
 Agathorhipis, <i>Fauvel</i>, Ins. 162
 Agraptocoris, <i>Reuter</i>, Ins. 324
 Agriosphyræna, <i>Fowler</i>, Pisces 40
 Ainocottus, <i>Jordan and Starks</i>, Pisces 29
 Aipeiopsis, <i>Péringuey</i>, Ins. 153
 Aissoblatta, <i>Handlirsch</i>, Ins. 125
 Alabastrina, <i>Kobelt</i>, Moll. 64
 Alaops, <i>Jordan and Starks</i>, Pisces 32
 Alamprella, <i>Horváth</i>, Ins. 315
 Alchisme, <i>Kirkaldy</i>, Ins. 336
 Alcichthys, <i>Jordan and Starks</i>, Pisces 29
 Algoala, <i>Jacoby</i>, Ins. 190
 Algoasaurus, <i>Broom</i>, Rept. 29
 Allexetastes, <i>Kokujev</i>, Ins. 218
 Allochalcis, <i>Kieffer</i>, Ins. 226</p> |
|--|--|

* The total number of names in this Index is 2095, distributed as follows:—*Mammalia*, 113; *Aves*, 9; *Reptilia* and *Batrachia*, 45; *Pisces*, 88; *Tunicata*, 12; *Mollusca*, 210; *Brachiopoda*, 2; *Bryozoa*, 13; *Crustacea*, 68; *Arachnida*, 97; *Myriopoda*, 23; *Insecta*, 1271; *Echinoderma*, 23; *Vermes*, 37; *Cœlenterata*, 15; *Spongiæ*, 21; *Protozoa*, 48. The total last year was 2054.

- Allocosa, *Banks*, Arachn. 33
 Allocota, *Meyrick*, Ins. 292
 Alloderma, *Ashmead*, Ins. 226
 Allceonycha, *Reuter*, Ins. 325
 Allogobius, *Waite*, Pisces 31
 Alloiodoris, *Bergh*, Moll. 71
 Allokotarsa, *Péringuey*, Ins. 153
 Allonema, *Ulrich and Bassler*, Bry. 16
 Allonomyna, *Dyar*, Ins. 292
 Allothrombium, *Berlese*, Arachn. 39
 Allotrypes, *François*, Ins. 150
 Alogistotarsa, *Péringuey*, Ins. 153
 Aloha, *Kirkaldy*, Ins. 332
 Alopomyia, *Ashmead*, Ins. 226
 Alopheus, *Ashmead*, Ins. 226
 Alpha, *Dalla Torre*, Ins. 207
 Althos, *Kirkaldy*, Ins. 319
 Alystria, *Cameron*, Ins. 218
 Amblysomus, *Faust*, Ins. 172
 Amelococcus, *Marchal*, Ins. 338
 Ameroseius, *Berlese*, Arachn. 39
 Ametallon, *Ashmead*, Ins. 226
 Ainfortas, *Kirkaldy*, Ins. 332
 Amiana, *Dyar*, Ins. 266
 Ammodillus, *Thomas*, Mamm. 39
 Ammonella, *Walther*, Spong. 16
 Amphiacantha, *Popofsky*, Prot. 52
 Amphiareus, *Distant*, Ins. 324
 Amphilonche, *Popofsky*, Prot. 52
 Amphimetron, *Popofsky*, Prot. 52
 Amphionides, *Zimmer*, Crust. 37
 Amphitemnus, *Ameghino*, Mamm. 50
 Amphoraceras, *Bethune-Baker*, Ins. 266
 Amphoreopsis, *Crick*, Moll. 61
 Anabaia, *Clarke*, Brach. 7
 Anacamptomyia, *Bischof*, Ins. 308
 Anacanthotermes, *Jacobson*, Ins. 345
 Anacharoides, *Cameron*, Ins. 235
 Anaclastus, *Turner*, Ins. 286
 Anadiasa, *Aurivillius*, Ins. 255
 Anadolops, *Ameghino*, Mamm. 50
 Anapalta, *Warren*, Ins. 272
 Anaphragma, *Ulrich and Bassler*, Bry. 11
 Anaptilora, *Meyrick*, Ins. 292
 Anarchita, *Bolívar*, Ins. 359
 Anasopsis, *Raffray*, Ins. 139
 Anasticomerus, *Heller*, Ins. 172
 Anchitheriomys, *Roger*, Mamm. 41
 Anepsiovalgus, *Kolbe*, Ins. 157
 Angeiocystis, *Brasil*, Prot. 55
 Angerianus, *Distant*, Ins. 325
 Angigaster, *Pilsbry and Hirase*, Moll. 81
 Anisodolops, *Ameghino*, Mamm. 50
 Anisolasia, *Warren*, Ins. 272
 Anisopsammia, *Marenzeller*, Coel. 27
 Anisopsis, *Fauvel*, Ins. 133
 Annomatophilus, *Wasmann*, Ins. 133
 Anomiopsyllus, *Baker*, Ins. 313
 Anommatoxenus, *Wasmann*, Ins. 133
 Anorygma, *Horváth*, Ins. 320
 Antankaria, *Distant*, Ins. 330
 Antennocelæno, *Berlese*, Arachn. 40
 Antennurella, *Berlese*, Arachn. 40
 Anthisaurepus, *Lull*, Rept. 29
 Anthodiocetes, *Holmberg*, Ins. 200
 Antholcus, *Konow*, Ins. 236
 Anthracentomon, *Handlirsch*, Ins. 125
 Anthraconema, *Strassen*, Verm. 52
 Anthracopalara, *Handlirsch*, Ins. 126
 Anthrenosoma, *Jordan*, Ins. 183
 Anthrocomastax, *Handlirsch*, Ins. 126
 Antiagrion, *Ris*, Ins. 348
 Antilocoris, *Kirkaldy*, Ins. 320
 Antispira, *Perner*, Moll. 82
 Antistasea, *Bischof*, Ins. 308
 Aphaneramma, *Woodward*, Rept. 40
 Aphanomastix, *Heller*, Ins. 172
 Aphobetoideus, *Ashmead*, Ins. 227
 Aphrotus, *Péringuey*, Ins. 166
 Aphylostylus, *Whiteaves*, Coel. 28
 Aphyomerus, *Hartmann*, Ins. 172
 Apiciopsis, *Warren*, Ins. 272
 Aploderina, *Raffray*, Ins. 139
 Aplorama, *Warren*, Ins. 272
 Apocryptophagus, *Ashmead*, Ins. 227
 Aporexius, *Raffray*, Ins. 139
 Aporodesminus, *Silvestri*, Myr. 13
 Aporotopus, *Faust*, Ins. 172
 Apotistatus, *Walsingham*, Ins. 292
 Aprunella, *Bianchi*, Aves 58
 Apsophus, *Hartmann*, Ins. 172
 Apternodus, *Matthew*, Mamm. 36
 Apterotettix, *Hancock*, Ins. 359
 Aptodrilus, *Cognetti*, Verm. 38
 Aragonia, *Ameghino*, Mamm. 50
 Araias, *Jordan and Starks*, Pisces 32
 Araspus, *Distant*, Ins. 325
 Arawacus, *Kaye*, Ins. 249
 Archæodolops, *Ameghino*, Mamm. 50
 Archæoscina, *Stebbing*, Crust. 46
 Archiascidia, *Julin*, Tun. 4
 Archoblattina, *Sellards*, Ins. 126
 Archotermopsis, *Desneux*, Ins. 345

- Arculanus, *Distant*, Ins. 325
 Arcynopteryx, *Klapálek*, Ins. 347
 Argenis, *Distant*, Ins. 325
 Argyrolagus, *Ameghino*, Mamm. 50
 Argyrolambda, *Ameghino*, Mamm. 49
 Argyromanis, *Ameghino*, Mamm. 50
 Argyrostroma, *Aurivillius*, Ins. 255
 Ariomma, *Jordan and Snyder*, Pisces 38
 Aristodacnus, *Maindron*, Ins. 128
 Armachanus, *Distant*, Ins. 325
 Arnulphus, *Distant*, Ins. 324
 Arotis, *Mabille*, Ins. 251
 Arotia, *Meyrick*, Ins. 292
 Arraphytarsa, *Péringuey*, Ins. 153
 Arrhenoplita, *Fauvel*, Ins. 166
 Arunta, *Distant*, Ins. 330
 Asbolis, *Mabille*, Ins. 251
 Aselloidea, *Richardson*, Crust. 39
 Asemogena, *Péringuey*, Ins. 166
 Asinocleonus, *Faust*, Ins. 172
 Asmunda, *Dall and Bartsch*, Moll. 82
 Aspideretes, *Hay*, Rept. 30
 Aspidosaurus, *Broili*, Rept. 40
 Astatheros, *Pellegrin*, Pisces 35
 Astatoreochromis, *Pellegrin*, Pisces 36
 Astatotilapia, *Pellegrin*, Pisces 36
 Astratus, *Fairmaire*, Ins. 172
 Astrocharis, *Kochler*, Echin. 81
 Astrodia, *Verrill*, Echin. 82
 Astrophrya, *Azerintzev*, Prot. 60
 Atactogaster, *Faust*, Ins. 172
 Atelias, *Kirkaldy*, Ins. 315
 Atenisodus, *Raffray*, Ins. 140
 Atherinomorus, *Fowler*, Pisces 41
 Atlantotlos, *Doflein*, Crust. 31
 Audernacus, *Distant*, Ins. 322
 Aulacomima, *Meyrick*, Ins. 292
 Aulocyathus, *Marenzeller*, Coel. 28
 Aulophyton, *Immermann*, Prot. 53
 Aulopocella, *Maplestone*, Bry. 13
 Auriptygma, *Perner*, Moll. 82
 Avellopsiis, *Purcell*, Arachn. 22
 Aximogastra, *Ashmead*, Ins. 227
 Aximopsia, *Ashmead*, Ins. 227
 Axiologa, *Turner*, Ins. 255
 Axiothella, *Verrill*, Verm. 32
 Azuma, *Needham*, Ins. 348
 Bæosomus, *Brown*, Ins. 172
 Baldræ, *Dall and Bartsch*, Moll. 83
 Baliosus, *Weise*, Ins. 196
 Ballonema, *Verhoeff*, Myr. 9
 Baptarma, *Smith*, Ins. 266
 Baptopoda, *Bernhauer*, Ins. 134
 Barentsia, *Stebbing*, Crust. 43
 Barra, *Jordan*, Ins. 183
 Bartacus, *Distant*, Ins. 322
 Baruna, *Stebbing*, Crust. 30
 Bathmedonia, *Reichenow*, Aves 56
 Bathypera, *Michaelsen*, Tun. 5
 Batribolbus, *Raffray*, Ins. 140
 Batrisiella, *Raffray*, Ins. 140
 Batrisomalus, *Raffray*, Ins. 140
 Bayerus, *Distant*, Ins. 322
 Bergias, *Kirkaldy*, Ins. 332
 Bergrothina, *Schouteden*, Ins. 316
 Bergthora, *Kirkaldy*, Ins. 315
 Beriqua, *Péringuey*, Ins. 153
 Berlieria, *Loriot*, Moll. 82
 Bero, *Jordan and Starks*, Pisces 29
 Berthais, *Melville*, Moll. 82
 Bertsa, *Kirkaldy*, Ins. 324
 Besla, *Dall and Bartsch*, Moll. 83
 Beta, *Dalla Torre*, Ins. 207
 Betulodes, *Thierry-Mieg*, Ins. 273
 Bibiodes, *Coquillett*, Ins. 302
 Bibla, *Mabille*, Ins. 251
 Biblomimus, *Raffray*, Ins. 140
 Bimicroporella, *Canu*, Bry. 13
 Birulia, *Brazhnikov*, Crust. 35
 Blaberops, *Jordan*, Ins. 183
 Blæsochaetophora, *Czerny*, Ins. 310
 Blatticida, *Ashmead*, Ins. 227
 Blattivorus, *Chobaut*, Ins. 170
 Blattodromus, *Reitter*, Ins. 145
 Boethoos, *Kirkaldy*, Ins. 336
 Bolbophites, *Fauvel*, Ins. 134
 Boloceroopsis, *McMurrich*, Coel. 28
 Bolosoma, *Ijima*, Spong. 15
 Bombylodes, *Fauvel*, Ins. 134
 Boopinus, *Klima*, Ins. 134
 Bothriocerodes, *Fowler*, Ins. 332
 Bothriogaster, *Fuhrmann*, Verm. 48
 Bothrochaleis, *Cameron*, Ins. 235
 Botocudo, *Kirkaldy*, Ins. 320
 Botteria, *Brusina*, Moll. 64
 Boulengerochromis, *Pellegrin*, Pisces 35
 Brabiroides, *Warren*, Ins. 273
 Brachybrachium, *Williston*, Rept. 33
 Brachycaudonia, *Ashmead*, Ins. 227
 Brachyleonius, *Faust*, Ins. 173
 Brachyctenistis, *Warren*, Ins. 273
 Brachymitra, *Kolbe*, Ins. 157
 Brachynillus, *Reitter*, Ins. 129
 Brachyphyma, *Horváth*, Ins. 320
 Brachypodopsis, *Piersig*, Arachn. 40
 Brachystichia, *Warren*, Ins. 273
 Brachytrita, *Swinhoe*, Ins. 273
 Bradamina, *Fairmaire*, Ins. 190
 Bradyurus, *Gill*, Pisces 39

- Brassivola, *Distant*, Ins. 322
 Braunsella, *Buckman*, Moll. 60
 Brepholoxa, *van Duzee*, Ins. 316
 Broconius, *Desbrochers*, Ins. 173
 Brontispa, *Sharp*, Ins. 196
 Brontostoma, *Kirkaldy*, Ins. 322
 Bruchobius, *Ashmead*, Ins. 227
 Brulleia, *Szépligeti*, Ins. 224
 Bryaxina, *Raffray*, Ins. 140
 Bryocrypta, *Meunier*, Ins. 124
 Bryothinusa, *Casey*, Ins. 134
 Buena, *Kirkaldy*, Ins. 329
 Bulua, *Boulenger*, Rept. 36
 Bunoderus, *Raffray*, Ins. 140
 Burma, *Kirkaldy*, Ins. 315
 Burtonilla, *Smith*, Moll. 79
 Busseola, *Thurau*, Ins. 266
 Buttia, *Warren*, Ins. 273

 Cabnia, *Dyar*, Ins. 287
 Cacama, *Distant*, Ins. 330
 Cacotherapia, *Dyar*, Ins. 287
 Cadmon, *Cambridge*, Arachn. 21
 Caducifer, *Dall*, Moll. 77
 Cænophilus, *Ameghino*, Mamm. 49
 Calamacris, *Rehn*, Ins. 359
 Caliothrips, *Daniel*, Ins. 349
 Callanthribus, *Jordan*, Ins. 183
 Callergates, *Lameere*, Ins. 186
 Calliceratides, *Distant*, Ins. 325
 Callipona, *Turner*, Ins. 273
 Calliseidus, *Horváth*, Ins. 320
 Callismicra, *Kieffer*, Ins. 227
 Callogyra, *Verrill*, Coel. 28
 Callolongchæus, *Dall and Bartsch*,
 Moll. 83
 Callomegas, *Lameere*, Ins. 186
 Calloporina, *Ulrich and Bussler*,
 Bry. 11
 Callygris, *Thierry-Mieg*, Ins. 273
 Calodemus, *Faust*, Ins. 173
 Calveria, *Delage*, Echin. 76
 Campylotropis, *Reuter*, Ins. 325
 Canavurella, *Buckman*, Moll. 60
 Canavarina, *Buckman*, Moll. 60
 Cancellariella, *Martin*, Moll. 74
 Capellanus, *Distant*, Ins. 325
 Caradrinopsis, *Swinhoe*, Ins. 273
 Cardiocephalus, *Broili*, Rept. 40
 Carpauleum, *Sloane*, Ins. 129
 Caryoryctes, *Calkins*, Prot. 57
 Casmenella, *Jacoby*, Ins. 191
 Catageiomyia, *Theobald*, Ins. 299
 Catagonus, *Ameghino*, Mamm. 50
 Cattania, *Brusina*, Moll. 64
 Caudellia, *Dyar*, Ins. 287
 Cecidoxenus, *Ashmead*, Ins. 227
 Cedusa, *Fowler*, Ins. 332
 Centrobranchus, *Fowler*, Pisces 44
 Centrocidaris, *Agassiz*, Echin. 54
 Centromantis, *Werner*, Ins. 355
 Centrophthalmosis, *Raffray*, Ins.
 140
 Centrosaurus, *Lambe*, Rept. 29
 Cephalopoda, *Berlese*, Arachn. 40
 Ceramba, *Fauvel*, Ins. 166
 Cerapteroceroides, *Ashmead*, Ins.
 227
 Ceratiscus, *Caudell*, Ins. 356
 Cerato, *Meunier*, Ins. 125
 Ceratosmicra, *Ashmead*, Ins. 227
 Cercoceropsis, *Raffray*, Ins. 141
 Cercocerulus, *Raffray*, Ins. 141
 Ceroniola, *Wilckens*, Moll. 87
 Cervellus, *Szépligeti*, Ins. 224
 Cervulus, *Szépligeti*, Ins. 224
 Chacoana, *Holmberg*, Ins. 201
 Chætoclusia, *Coquillett*, Ins. 310
 Chætoleistus, *Semenov*, Ins. 129
 Chalepogenus, *Holmberg*, Ins. 201
 Chalinia, *Meyrick*, Ins. 292
 Challia, *Burr*, Ins. 352
 Chamus, *Distant*, Ins. 325
 Charadriola, *Madarasz*, Aves 64
 Charitocoris, *Reuter*, Ins. 325
 Charitovalgus, *Kolbe*, Ins. 157
 Chaunangium, *Schulze*, Spong. 15
 Cheiridella, *Jacoby*, Ins. 191
 Cheiriphotis, *Walker*, Crust. 44
 Cheletoides, *Oudemans*, Arachn. 40
 Cheletomimus, *Oudemans*, Arachn.
 40
 Cheletomorpha, *Oudemans*, Arachn.
 40
 Cheletophanes, *Oudemans*, Arachn.
 40
 Cheletopsis, *Oudemans*, Arachn. 40
 Chelyoposaurus, *Broom*, Rept. 33
 Chenniopsis, *Raffray*, Ins. 141
 Chenogaster, *Lahille*, Pisces 33
 Chevalia, *Walker*, Crust. 44
 Chiasmocleis, *Méhely*, Rept. 37
 Chiognathus, *Sars*, Crust. 50
 Chlamydes, *Jenkins*, Pisces 31
 Chloeria, *Mabille*, Ins. 251
 Chlorochaeta, *Warren*, Ins. 274
 Chlorosomella, *Reuter*, Ins. 325
 Choanocystis, *Penard*, Prot. 50
 Chonaphe, *Cook*, Myr. 14
 Chondrolepis, *Mabille*, Ins. 251
 Choniocardia, *Cossmann*, Moll. 88
 Chorizocarpa, *Michaelsen*, Tun. 5
 Chromotydeus, *Berlese*, Arachn. 40
 Chrysoatomus, *Ashmead*, Ins. 227
 Chrysonotomyia, *Ashmead*, Ins. 227

- Cionellus, *Reitter*, Ins. 174
 Cirrhitioidea, *Jenkins*, Pisces 38
 Cirropsis, *Perner*, Moll. 84
 Cirrospiloideus, *Ashmead*, Ins. 228
 Cladocerapis, *Cockerell*, Ins. 201
 Cladodidelphys, *Ameghino*, Mamm. 50
 Clapmarius, *Distant*, Ins. 325
 Clavellofusius, *Grabau*, Moll. 76
 Clavulites, *Girty*, Moll. 86
 Cleisthenes, *Jordan and Starks*, Pisces 32
 Clenia, *Ameghino*, Mamm. 50
 Cleptidea, *Mocsáry*, Ins. 217
 Clitotrema, *Simon*, Arachn. 21
 Clusiodes, *Coquillett*, Ins. 310
 Clypeasta, *Fairmaire*, Ins. 153
 Clytocerus, *Eaton*, Ins. 302
 Cochlearites, *Reis*, Moll. 90
 Cochlespiropsis, *Casey*, Moll. 74
 Cœlechinus, *Hücker*, Prot. 53
 Cœlochalcis, *Cameron*, Ins. 228
 Cœlojoppa, *Cameron*, Ins. 219
 Colgorma, *Kirkaldy*, Ins. 332
 Collybus, *Snyder*, Pisces 27
 Colobodes, *Meyrick*, Ins. 293
 Colpoglossus, *Boulenger*, Rept. 37
 Combalus, *Distant*, Ins. 325
 Compsocalyx, *Schulze*, Spong. 14
 Compsoglypha, *Fairmaire*, Ins. 159
 Conohalictoides, *Viereck*, Ins. 202
 Conothoa, *Lyon*, Mamm. 42
 Copeichthys, *Dollo*, Pisces 50
 Coptoeme, *Aurivillius*, Ins. 186
 Coralliocraugon, *Nobili*, Crust. 35
 Cordyloides, *Fritsch*, Rept. 40
 Corymbitodes, *du Buysson*, Ins. 161
 Cosmina, *Perner*, Moll. 85
 Cosmogaster, *Faust*, Ins. 175
 Cosmolaelaps, *Berlese*, Arachn. 41
 Cosmolithes, *Grabau*, Moll. 76
 Cossmannica, *Dall and Bartsch*, Moll. 83
 Cottiusculus, *Jordan and Starks*, Pisces 29
 Craspedotis, *Meyrick*, Ins. 293
 Craspedotriton, *Dall*, Moll. 77
 Cremifania, *Czerny*, Ins. 310
 Crescentius, *Distant*, Ins. 324
 Cribricella, *Canu*, Bry. 14
 Crœsopola, *Meyrick*, Ins. 293
 Crossias, *Jordan and Starks*, Pisces 29
 Crymus, *Fauvel*, Ins. 134
 Cryptohalictoides, *Viereck*, Ins. 202
 Cryptoscopa, *Turner*, Ins. 274
 Ctenicellus, *Raffray*, Ins. 141
 Ctenisomimus, *Raffray*, Ins. 141
 Ctenocephalus, *Linstow*, Verm. 52
 Ctenodrapetis, *Bezzi*, Ins. 305
 Ctenoglypta, *Ancey*, Moll. 62
 Ctenolophus, *Purcell*, Arachn. 21
 Ctenophryne, *Mocquard*, Rept. 36
 Culicada, *Felt*, Ins. 300
 Culicella, *Felt*, Ins. 300
 Culicelsa, *Felt*, Ins. 300
 Culiseta, *Felt*, Ins. 300
 Cultriopsis, *Cossmann*, Moll. 90
 Cyanaspis, *Weise*, Ins. 197
 Cycethra, *Bethune-Baker*, Ins. 257
 Cyclochoria, *Stichel*, Ins. 246
 Cyclotropis, *Perner*, Moll. 85
 Cyclumna, *Fowler*, Ins. 332
 Cylichnopsis, *Cossmann*, Moll. 73
 Cymatomorpha, *Meyrick*, Ins. 293
 Cynodonichthys, *Meek*, Pisces 42
 Cynthiopsis, *Michaelsen*, Tun. 5
 Cyphodemidea, *Reuter*, Ins. 326
 Cyphotrypa, *Ulrich and Bassler*, Bry. 12
 Cyrtocoris, *Aurivillius*, Ins. 187
 Cyrtoplectus, *Raffray*, Ins. 141
 Cyrtura, *Jaekel*, Rept. 33
 Cystomastax, *Szépligeti*, Ins. 224
 Cystopsaltria, *Goding and Froggatt*, Ins. 330
 Cyttosoma, *Gilchrist*, Pisces 33
 Dactylopoda, *Sars*, Crust. 50
 Dagbertus, *Distant*, Ins. 326
 Daldorfia, *Rathbun*, Crust. 28
 Dalla, *Mabille*, Ins. 251
 Danellera, *Kirkaldy*, Ins. 315
 Dandinus, *Distant*, Ins. 316
 Danielsia, *Theobald*, Ins. 300
 Darellella, *Buckman*, Moll. 60
 Darellina, *Buckman*, Moll. 60
 Darpasus, *Cameron*, Ins. 219
 Daruma, *Jordan and Starks*, Pisces 29
 Darymna, *Cameroon*, Ins. 219
 Dasychiroides, *Bethune-Baker*, Ins. 257
 Dasyleurotettix, *Rehn*, Ins. 360
 Dasyrhopala, *Jordan*, Ins. 184
 Dasysterna, *Turner*, Ins. 275
 Dasyvalgus, *Holbe*, Ins. 157
 Dawsonites, *Böhm*, Moll. 60
 Decatelia, *Weise*, Ins. 197
 Decatomothorax, *Ashmead*, Ins. 228
 Decterias, *Jordan and Starks*, Pisces 30
 Dectobathra, *Meyrick*, Ins. 293
 Deinopygia, *Warren*, Ins. 275
 Delios, *Portevin*, Ins. 145

- Delos, *Hutton*, Moll. 64
 Deltonotus, *Hancock*, Ins. 360
 Dendroterus, *Blandford*, Ins. 182
 Dermatonotus, *Méhely*, Rept. 37
 Deropoda, *Bernhauer*, Ins. 134
 Derosimus, *Fairmaire*, Ins. 166
 Dersagrena, *Kirkaldy*, Ins. 319
 Desinosyllis, *Verrill*, Verm. 32
 Deuterapoica, *Dalla Torre*, Ins. 207
 Deuterodiscoelius, *Dalla Torre*, Ins. 207
 Deuteroptila, *Meyrick*, Ins. 293
 Devarodes, *Warren*, Ins. 275
 Dewetia, *Bischof*, Ins. 308
 Dewetia, *Buturlin*, Aves 65
 Dexistes, *Jordan and Starks*, Pisces 32
 Diaphoroserica, *Péringuey*, Ins. 153
 Diaposis, *Raffray*, Ins. 141
 Diascopea, *Horváth*, Ins. 320
 Diaugis, *Raffray*, Ins. 141
 Diaulomorpha, *Ashmead*, Ins. 228
 Diaulus, *Ashmead*, Ins. 228
 Diceratoptyx, *Pilsbry*, Moll. 68
 Diceratucha, *Swinhoe*, Ins. 275
 Dichelotrox, *Heller*, Ins. 175
 Dicranotropis, *Faust*, Ins. 175
 Dictynina, *Banks*, Arachn. 22
 Dictyogenus, *Klapálek*, Ins. 347
 Dictyopterygella, *Klapálek*, Ins. 347
 Dicyrtocercyon, *Ganglbauer*, Ins. 133
 Didymolophus, *Fairmaire*, Ins. 161
 Dientomochilus, *Cossmann*, Moll. 77
 Diestesoma, *Péringuey*, Ins. 166
 Diffugiella, *Cash*, Prot. 43
 Diglyphomorpha, *Ashmead*, Ins. 228
 Dilatilabrum, *Cossmann*, Moll. 77
 Dimmockia, *Ashmead*, Ins. 228
 Dinawa, *Bethune-Baker*, Ins. 257
 Dinosis, *Fairmaire*, Ins. 176
 Dioclophara, *Kirkaldy*, Ins. 336
 Diotrodes, *Coquillett*, Ins. 304
 Diognetus, *Distant*, Ins. 326
 Diploctena, *Turner*, Ins. 275
 Diploglena, *Purcell*, Arachn. 24
 Diplophryxus, *Richardson*, Crust. 41
 Discolepis, *Ancey*, Moll. 64
 Discopterella, *Semenov*, Ins. 129
 Discovermetulus, *Kováčeto*, Moll. 78
 Discoxenus, *Wasmann*, Ins. 135
 Distasis, *Handlirsch*, Ins. 126
 Distega, *Konow*, Ins. 236
 Disteiromys, *Ameghino*, Mamm. 50
 Dithmarus, *Distant*, Ins. 322
 Diversosexus, *Bethune-Baker*, Ins. 257
 Doderia, *Silvestri*, Myr. 13
 Dodonæus, *Distant*, Ins. 322
 Doleroserica, *Péringuey*, Ins. 153
 Dolerotarsa, *Péringuey*, Ins. 153
 Dolichisine, *Kirkaldy*, Ins. 315
 Dolichobrachiun, *Williston*, Rept. 33
 Domoptolis, *Jordan*, Ins. 184
 Donaldia, *Perner*, Moll. 86
 Dorata, *Busck*, Ins. 293
 Dorelogena, *Péringuey*, Ins. 166
 Dorylocerus, *Wasmann*, Ins. 135
 Dorylogaster, *Wasmann*, Ins. 135
 Dorylominus, *Wasmann*, Ins. 135
 Dorylonia, *Wasmann*, Ins. 135
 Dorylonilla, *Wasmann*, Ins. 135
 Dorylophila, *Wasmann*, Ins. 135
 Dorylopora, *Wasmann*, Ins. 135
 Dragmatyle, *Topsent*, Spoug. 24
 Drasinus, *Raffray*, Ins. 141
 Drassinella, *Banks*, Arachn. 24
 Drobacia, *Brusina*, Moll. 65
 Dromeciton, *Fauvel*, Ins. 135
 Drosomyia, *De Meijere*, Ins. 310
 Dryaphis, *Kirkaldy*, Ins. 337
 Dryopcia, *Kirkaldy*, Ins. 337
 Dunbrodianus, *Pic*, Ins. 170
 Dupotetia, *Kobelt*, Moll. 65
 Durbana, *Warren*, Ins. 275
 Dyadentomum, *Handlirsch*, Ins. 125
 Dyadozoarium, *Handlirsch*, Ins. 125
 Ebæomorphus, *Pic*, Ins. 162
 Ebosia, *Jordan and Starks*, Pisces 30
 Ecbletodes, *Turner*, Ins. 287
 Eccoptoglossa, *Luze*, Ins. 135
 Ecculex, *Felt*, Ins. 300
 Echinodiscaster, *Delage*, Echin. 77
 Echinomegistus, *Berlese*, Arachn. 41
 Echinoseius, *Ribaya*, Arachn. 41
 Ectocyclops, *Brady*, Crust. 50
 Ectopocerus, *Raffray*, Ins. 141
 Egapista, *Cockerell*, Ins. 202
 Egila, *Dall and Bartsch*, Moll. 83
 Eisenia, *Ashmead*, Ins. 228
 Elacatinus, *Jordan*, Pisces 31
 Elachertomorpha, *Ashmead*, Ins. 228
 Elachisine, *Kirkaldy*, Ins. 319
 Elaphocranus, *Bergroth*, Ins. 322
 Eleusomatus, *Raffray*, Ins. 141
 Eleusoptamus, *Raffray*, Ins. 141
 Eleutherocaris, *Clarke*, Crust. 47
 Elliptodactylus, *Doflein*, Crust. 29
 Empheremyia, *Bischof*, Ins. 308
 Empysarus, *Martin*, Ins. 317
 Encoma, *Swinhoe*, Ins. 275
 Encryphia, *Turner*, Ins. 275
 Encyrtaspis, *Ashmead*, Ins. 228

- Energoponus, *Holmberg*, Ins. 202
 Enicosoma, *Lewis*, Ins. 146
 Enidia, *Smith*, Arachn. 27
 Enneasmicra, *Ashmead*, Ins. 228
 Enteroxenos, *Bonnevie*, Moll. 83
 Entogonia, *Warren*, Ins. 275
 Entogonites, *Kittl*, Moll. 60
 Entomotrogus, *Ganglbauer*, Ins. 148
 Eoarmadillidium, *Dollfus*, Crust. 42
 Eobrissus, *Bell*, Echin. 60
 Eoclathurella, *Casey*, Moll. 74
 Eodrillia, *Casey*, Moll. 74
 Eohemera, *Aurivillius*, Ins. 258
 Eosurcula, *Casey*, Moll. 74
 Epanaphe, *Aurivillius*, Ins. 258
 Eparmene, *Fowler*, Ins. 333
 Ephelictis, *Meyrick*, Ins. 293
 Ephimeronotus, *Faust*, Ins. 176
 Ephutopsis, *Ashmead*, Ins. 211
 Ephymata, *Raffray*, Ins. 141
 Epibrontis, *Meyrick*, Ins. 293
 Epichalcoplethis, *Arrow*, Ins. 155
 Epicoleotichus, *Schouteden*, Ins. 317
 Epilectus, *Faust*, Ins. 176
 Epimastis, *Meyrick*, Ins. 293
 Epimonispractor, *Holmberg*, Ins. 202
 Epinebriola, *Daniel*, Ins. 130
 Epipatriarchus, *Ameghino*, Mamm. 49
 Epipeltephilus, *Ameghino*, Mamm. 51
 Epipheidole, *Wheeler*, Ins. 215
 Epipteromalus, *Ashmead*, Ins. 228
 Episageceras, *Noetling*, Moll. 60
 Eremattus, *Banks*, Arachn. 35
 Eremica, *Walsingham*, Ins. 293
 Eremomus, *Raffray*, Ins. 141
 Eremopezus, *Andrews*, Aves. 37
 Erginoides, *Cambridge*, Arachn. 38
 Ercteis, *Jordan*, Pisces 27
 Erigonidium, *Smith*, Arachn. 28
 Erisphex, *Jordan and Starks*, Pisces 31
 Eriximachus, *Distant*, Ins. 322
 Erlandia, *Aurivillius*, Ins. 187
 Erosa, *Jordan and Starks*, Pisces 31
 Erytylopsis, *Jordan*, Ins. 184
 Erythrocheilus, *Berlese*, Arachn. 41
 Estuidus, *Distant*, Ins. 326
 Eteoneus, *Kirkaldy*, Ins. 336
 Etiserica, *Péringuey*, Ins. 153
 Etorleptomymia, *Theobald*, Ins. 300
 Euænarina, *Bredin*, Ins. 317
 Eualastor, *Dalla Torre*, Ins. 207
 Euancistrocerus, *Dalla Torre*, Ins. 207
 Eubordeta, *Rothschild*, Ins. 276
 Eubrachiosaurus, *Williston*, Rept. 33
 Eucalantica, *Busck*, Ins. 293
 Euceramius, *Dalla Torre*, Ins. 207
 Euceratherium, *Furlong and Sinclair*, Mamm. 43
 Euchreodes, *Nurse*, Ins. 217
 Eucleonus, *Faust*, Ins. 176
 Euclymene, *Verrill*, Verm. 32
 Eucyclotropis, *Jordan*, Ins. 184
 Eucynopotamus, *Fowler*, Pisces 49
 Eudiscælius, *Friese*, Ins. 207
 Euembia, *Verhoeff*, Ins. 346
 Euepipona, *Dalla Torre*, Ins. 207
 Eufroggattia, *Ashmead*, Ins. 228
 Eugoides, *Aurivillius*, Ins. 187
 Eugonodes, *Jordan*, Ins. 184
 Eugonops, *Jordan*, Ins. 184
 Eugrymæa, *Verrill*, Verm. 36
 Eugyrina, *Dall*, Moll. 77
 Euherdmania, *Ritter*, Tun. 6
 Euidosomus, *Reitter*, Ins. 176
 Eukoëbelea, *Ashmead*, Ins. 228
 Eulælaps, *Berlese*, Arachn. 41
 Eulanbda, *Ameghino*, Mamm. 49
 Eulophopteryx, *Ashmead*, Ins. 228
 Eumasia, *Chrétien*, Ins. 293
 Eumilionia, *Thierry-Mieg*, Ins. 276
 Eumontezumia, *Dalla Torre*, Ins. 208
 Eunonia, *Casey*, Ins. 135
 Euodynerus, *Dalla Torre*, Ins. 208
 Euophthalmomyia, *Ashmead*, Ins. 228
 Euparatettix, *Hancock*, Ins. 360
 Eupedetes, *Scudder*, Ins. 360
 Eupera, *Michaelsen*, Tun. 6
 Euphalerus, *Schwarz*, Ins. 337
 Euphlæobius, *Jordan*, Ins. 184
 Eupododus, *Kirkaldy*, Ins. 315
 Eupolistes, *Dalla Torre*, Ins. 208
 Eupolybia, *Dalla Torre*, Ins. 208
 Eupolymnia, *Verrill*, Verm. 32
 Euproctilla, *Aurivillius*, Ins. 258
 Euprotherotherium, *Ameghino*, Mamm. 50
 Eupsorus, *Brown*, Ins. 135
 Eurhythma, *Turner*, Ins. 287
 Euronycha, *Péringuey*, Ins. 153
 Eurrhynchium, *Dalla Torre*, Ins. 208
 Euryalus, *Matschie*, Mamm. 34
 Eurygnathomyia, *Czerny*, Ins. 310
 Eusayia, *Ashmead*, Ins. 229
 Eusintor, *Jordan*, Ins. 184
 Eusirogenes, *Stebbing*, Crust. 44
 Eusomatulus, *Reitter*, Ins. 176
 Eustypiura, *Ashmead*, Ins. 229

- Eusynagris*, *Dalla Torre*, Ins. 208
Eusynstyela, *Michaelsen*, Tun. 6
Euteleia, *Raffray*, Ins. 142
Eutrichocera, *Hampson*, Ins. 288
Eutrigaster, *Cognetti*, Verm. 38
Eutritonium, *Cossmann*, Moll. 77
Euvacus, *Casey*, Ins. 169
Euvipio, *Szépligeti*, Ins. 224
Euvonymus, *Distant*, Ins. 323
Euzethus, *Dalla Torre*, Ins. 208
Evalina, *Dall and Bartsch*, Moll. 83
Eviota, *Jenkins*, Pisces 31
Eviphis, *Berlese*, Arachn. 42
Exallus, *Raffray*, Ins. 142
Excorallana, *Stebbing*, Crust. 40
Exechontis, *Jordan*, Ins. 184
Exoristobia, *Ashmead*, Ins. 229
- Fasula*, *Cameron*, Ins. 220
Fagina, *Attems*, Myr. 13
Fajumia, *Stromer*, Pisces 46
Falconeria, *Smith*, Arachn. 28
Falsifusus, *Grabau*, Moll. 76
Faroella, *Wolfenden*, Crust. 50
Faustina, *Kobelt*, Moll. 65
Felisacus, *Distant*, Ins. 326
Femoriferus, *Attems*, Myr. 15
Fingulus, *Distant*, Ins. 326
Florichisme, *Kirkaldy*, Ins. 332
Fœnomorpha, *Szépligeti*, Ins. 224
Fokkeria, *Schouteden*, Ins. 317
Folinella, *Dall and Bartsch*, Moll. 83
Forcipator, *Maindron*, Ins. 130
Frechiella, *Prinz*, Moll. 60
Fritschia, *Picard*, Moll. 82
Froekenia, *Hoyle*, Moll. 60
Froggattia, *Ashmead*, Ins. 229
Fulgentius, *Distant*, Ins. 326
Fulgurofusus, *Grabau*, Moll. 76
Furcina, *Jordan and Starks*, Pisces 29
Fusitoma, *Casey*, Moll. 74
- Gabriola*, *Taylor*, Ins. 277
Galeodopsis, *Birula*, Arachn. 36
Gallea, *Walker*, Crust. 44
Gallobelicus, *Distant*, Ins. 326
Galopagomyia, *Bischof*, Ins. 309
Gamasholaspis, *Berlese*, Arachn. 42
Gasasiphis, *Berlese*, Arachn. 42
Gamka, *Péringuey*, Ins. 153
Gastroxys, *Horváth*, Ins. 317
Gazanus, *Péringuey*, Ins. 130
Gelastogonia, *Kirkaldy*, Ins. 336
Gelastophantia, *Kirkaldy*, Ins. 332
Gelastophara, *Kirkaldy*, Ins. 336
- Gelastyra*, *Kirkaldy*, Ins. 332
Gelchossa, *Kirkaldy*, Ins. 321
Geniohyus, *Andrews*, Mamm. 44
Genophion, *Felt*, Ins. 220
Geolycosa, *Montgomery*, Arachn. 33
Gerontia, *Schaus*, Ins. 259
Getoetherium, *Ameghino*, Mamm. 49
Girardotia, *Loriol*, Moll. 87
Gismunda, *Distant*, Ins. 326
Glanosuchus, *Broom*, Rept. 32
Glaphyrocoris, *Reuter*, Ins. 326
Glaucopsaltria, *Goding and Froggatt*, Ins. 330
Glochinoscerus, *Blandford*, Ins. 182
Glossopeltis, *Reuter*, Ins. 326
Glyphopsyche, *Banks*, Ins. 341
Glyptotoma, *Casey*, Moll. 74
Godefridus, *Distant*, Ins. 323
Golasa, *Raffray*, Ins. 142
Gonaulax, *Schouteden*, Ins. 317
Gonioclaus, *Jordan*, Ins. 184
Goniodon, *Perrier*, Echin. 77
Gonochlora, *Swinhoe*, Ins. 277
Gonopithecus, *Ameghino*, Mamm. 49
Gonoproterus, *Brown*, Ins. 176
Grammicopteryx, *Thierry-Mieg*, Ins. 277
Grammoa, *Auricillius*, Ins. 259
Grandidierella, *Coutière*, Crust. 44
Greeleyella, *Cockerell*, Ins. 202
Grimgerda, *Kirkaldy*, Ins. 315
Gronovius, *Jacoby*, Ins. 192
Grubeosyllis, *Verrill*, Verm. 33
Gryphonycha, *Péringuey*, Ins. 153
Guentheridia, *Gilbert and Starks*, Pisces 25
Gueriniellus, *Kirkaldy*, Ins. 315
Guisardus, *Distant*, Ins. 326
Gulbarentsia, *Stebbing*, Crust. 44
Gynandrosoma, *Dyar*, Ins. 291
Gyostega, *Warren*, Ins. 277
- Haaniella*, *Kirby*, Ins. 356
Haeckelia, *Kirkaldy*, Ins. 319
Hæmocystidium, *Castellani and Willey*, Prot. 55
Hæmodipsas, *Enderlein*, Ins. 340
Hæmus, *Péringuey*, Ins. 166
Haggardia, *Warren*, Ins. 277
Haldra, *Dall and Bartsch*, Moll. 83
Halistrepta, *Dall*, Moll. 87
Halosoma, *Cole*, Crust. 61
Hamadryaphis, *Kirkaldy*, Ins. 337
Hamza, *Distant*, Ins. 330
Haplaxius, *Fowler*, Ins. 333
Haploembia, *Verhoeff*, Ins. 346

- Haplomylomys, *Osgood*, Mamm. 40
 Haplotropidius, *Müller*, Ins. 145
 Hapochræus, *Raffray*, Ins. 142
 Harmomima, *Raffray*, Ins. 142
 Harpappe, *Cook*, Myr. 14
 Harpedona, *Distant*, Ins. 326
 Haullevillea, *Schoutedden*, Ins. 317
 Hedyjoppa, *Cameron*, Ins. 220
 Heeriella, *Meunier*, Ins. 125
 Heida, *Dall and Bartsch*, Moll. 83
 Heilprinia, *Grabau*, Moll. 76
 Helcosoma, *Wright*, Prot. 55
 Helenella, *Casey*, Moll. 74
 Hemiapterus, *Jacobi*, Ins. 335
 Hemiarcha, *Meyrick*, Ins. 294
 Hemicopsis, *Swinhoe*, Ins. 277
 Hemiglaphyrus, *Champenois*, Ins. 152
 Hemihoplopus, *Birula*, Arachn. 19
 Hemistylops, *Ameghino*, Mamm. 50
 Hemisurcula, *Casey*, Moll. 74
 Hemisyllis, *Verrill*, Verm. 33
 Hemitorymus, *Ashmead*, Ins. 229
 Hemixera, *Warren*, Ins. 278
 Hemizaptyx, *Pilsbry*, Moll. 68
 Heptasmicra, *Ashmead*, Ins. 229
 Herdmania, *Ritter*, Tun. 6
 Hermotinus, *Distant*, Ins. 326
 Hesperophantia, *Kirkaldy*, Ins. 332
 Hesperophara, *Kirkaldy*, Ins. 336
 Heteranthessius, *Scott*, Crust. 50
 Heteranthidium, *Cockerell*, Ins. 203
 Hetererannis, *Warren*, Ins. 278
 Heterias, *Richardson*, Crust. 39
 Heterobella, *Turner*, Ins. 288
 Heteroclathria, *Topsent*, Spong. 24
 Heterodictyna, *Dahl*, Arachn. 22
 Heterolambda, *Ameghino*, Mamm. 49
 Heteroleuca, *Warren*, Ins. 278
 Heteromorphysa, *Verrill*, Verm. 33
 Heteronema, *Ulrich and Bassler*, Bry. 16
 Heterotilapia, *Pellegrin*, Pisces 35
 Hexaplex, *Doflein*, Crust. 30
 Hexasmicra, *Ashmead*, Ins. 229
 Hextæus, *Brown*, Ins. 176
 Hicksia, *Delgado*, Crust. 58
 Hilia, *Distant*, Ins. 326
 Himalayites, *Boehm*, Moll. 60
 Himeromima, *Warren*, Ins. 278
 Hirsutopalpis, *Bethune-Baker*, Ins. 259
 Histionotophorus, *Eastman*, Pisces 26
 Holaspulus, *Berlese*, Arachn. 42
 Holcopeltoideus, *Ashmead*, Ins. 229
 Holisonycha, *Péringuey*, Ins. 153
 Holochalcis, *Kieffer*, Ins. 229
 Holognathus, *Thomson*, Crust. 41
 Holoscolex, *Cognetti*, Verm. 38
 Holostaspella, *Berlese*, Arachn. 43
 Homalothynnus, *Enderlein*, Ins. 211
 Homoclæus, *Jordan*, Ins. 184
 Homolochunia, *Doflein*, Crust. 32
 Homophylotis, *Turner*, Ins. 259
 Homospora, *Turner*, Ins. 278
 Hoplitodes, *Fauvel*, Ins. 136
 Hoplitovalgus, *Kolbe*, Ins. 157
 Hoplolaelaps, *Berlese*, Arachn. 43
 Hoplolontha, *Fairmaire*, Ins. 154
 Hoplomegistus, *Berlese*, Arachn. 43
 Hoplonomia, *Ashmead*, Ins. 203
 Hoploelidnota, *Bates*, Ins. 155
 Hoplopleura, *Enderlein*, Ins. 340
 Horio stomella, *Perner*, Moll. 85
 Hornellia, *Walker*, Crust. 44
 Hubbardiella, *Ashmead*, Ins. 229
 Hugia, *Buckman*, Moll. 60
 Hulecoeteomyia, *Theobald*, Ins. 301
 Huso, *Berg*, Pisces 52
 Hyadaphis, *Kirkaldy*, Ins. 337
 Hyalopola, *Warren*, Ins. 278
 Hyalopsyche, *Ulmer*, Ins. 341
 Hyalorrhoe, *Warren*, Ins. 278
 Hybappe, *Cook*, Myr. 14
 Hyboserica, *Péringuey*, Ins. 154
 Hybovalgus, *Kolbe*, Ins. 157
 Hydatoscia, *Warren*, Ins. 278
 Hydrorhoa, *Kieffer*, Ins. 229
 Hylochærus, *Thomas*, Mamm. 44
 Hylopachyiulus, *Attems*, Myr. 15
 Hymenosmithia, *Dalla Torre*, Ins. 208
 Hymetrochota, *Topsent*, Spong. 24
 Hyodectis, *Meyrick*, Ins. 294
 Hypamarygmus, *Gebien*, Ins. 167
 Hypanthidium, *Cockerell*, Ins. 203
 Hyperdidelphys, *Ameghino*, Mamm. 50
 Hyperectis, *Meyrick*, Ins. 288
 Hyphancylus, *Fowler*, Ins. 333
 Hypidota, *Schaus*, Ins. 260
 Hopolepis, *Warren*, Ins. 278
 Hypolophota, *Turner*, Ins. 288
 Hypometalla, *Warren*, Ins. 278
 Hypophylax, *Fairmaire*, Ins. 177
 Hypopteromalus, *Ashmead*, Ins. 229
 Hypozonium, *Cook*, Myr. 12
 Iaspis, *Kaye*, Ins. 249
 Icariastrum, *Dalla Torre*, Ins. 208
 Icariella, *Dalla Torre*, Ins. 208
 Icariola, *Dalla Torre*, Ins. 208
 Ichnytes, *Vinassa*, Rept. 40

- Idæacamenta, *Péringuey*, Ins. 154
 Idæserica, *Péringuey*, Ins. 154
 Idiophantis, *Meyrick*, Ins. 294
 Idiostoma, *Arrow*, Ins. 151
 Ignacia, *Kirby*, Ins. 356
 Incisura, *Hedley*, Moll. 86
 Indoennea, *Kobelt*, Moll. 62
 Inimicus, *Jordan and Starks*, Pisces 31
 Intranstylum, *Fauré*, Prot. 60
 Ioba, *Distant*, Ins. 330
 Iphiana, *Dall and Bartsch*, Moll. 83
 Iphiarusa, *Breddin*, Ins. 317
 Iphidioides, *Oudemans*, Arachn. 43
 Iphidiopsis, *Oudemans*, Arachn. 43
 Iphidulus, *Ribaya*, Arachn. 43
 Iropoca, *Turner*, Ins. 260
 Isachisme, *Kirkaldy*, Ins. 322
 Isaphe, *Cook*, Myr. 14
 Iscanus, *Fauvel*, Ins. 167
 Ischnolynthus, *Holmberg*, Ins. 211
 Ischnomembras, *Fowler*, Pisces 41
 Ischnopus, *Marshall*, Ins. 224
 Ischyrocera, *Hauser*, Ins. 157
 Ischyrocyon, *Matthew and Gidley*, Mamm. 37
 Isodiscodes, *Warren*, Ins. 279
 Isomicrus, *Hartmann*, Ins. 177
 Isoniscus, *Borg*, Ins. 354
 Isostigena, *Bethune-Baker*, Ins. 260
 Itaballia, *Kaye*, Ins. 241
 Itamus, *Raffray*, Ins. 142
 Iteticus, *Raffray*, Ins. 142
 Itylus, *Jacoby*, Ins. 193
 Iulota, *Meyrick*, Ins. 294
 Ividia, *Dall and Bartsch*, Moll. 83

 Janetiella, *Berlese*, Arachn. 47
 Jeanella, *Scott*, Crust. 51
 Joppoides, *Berthoumieu*, Ins. 221

 Kalania, *Kirkaldy*, Ins. 324
 Kareol, *Kirkaldy*, Ins. 332
 Karoomys, *Broom*, Mamm. 49
 Kayesia, *Schouteden*, Ins. 317
 Kearfottia, *Fernald*, Ins. 294
 Kelloggia, *Carriker*, Ins. 344
 Kennetus, *Distant*, Ins. 320
 Koebelea, *Ashmead*, Ins. 229
 Koma, *Distant*, Ins. 331
 Kongota, *Distant*, Ins. 331
 Koraia, *Herz*, Ins. 268
 Kosicia, *Brusina*, Moll. 66
 Krambergeria, *Simionescu*, Pisces 38
 Kraseophylla, *Péringuey*, Ins. 154
 Kronides, *Kirkaldy*, Ins. 336

 Laccophorella, *Horváth*, Ins. 317
 Lægula, *Cameron*, Ins. 221
 Lælaspis, *Berlese*, Arachn. 44
 Læogyra, *Perner*, Moll. 82
 Lagium, *Konow*, Ins. 237
 Lahillea, *Lortol*, Echin. 78
 Lamellitettix, *Hancock*, Ins. 360
 Lamprochelidon, *Ridgway*, Aves 54
 Lamprocryptus, *Schmiedeknecht*, Ins. 221
 Lampropepla, *Fairmaire*, Ins. 160
 Lancellata, *Dall and Bartsch*, Moll. 83
 Lanthanomelissa, *Holmberg*, Ins. 203
 Lar, *Semenow*, Ins. 147
 Lasioceros, *Bethune-Baker*, Ins. 260
 Lasiochara, *Bethune-Baker*, Ins. 260
 Lasiocnops, *Theobald*, Ins. 301
 Lasiolinacos, *Bethune-Baker*, Ins. 260
 Laufferia, *Bolívar*, Ins. 360
 Ledomyiella, *Meunier*, Ins. 125
 Leicesteria, *Theobald*, Ins. 301
 Leishmania, *Ross*, Prot. 56
 Lena, *Herz*, Ins. 268
 Lentalius, *Fairmaire*, Ins. 188
 Lentospora, *Plehn*, Prot. 56
 Leobatus, *Walsingham*, Ins. 294
 Leonardiella, *Berlese*, Arachn. 47
 Leontiniella, *Brèthes*, Ins. 208
 Leotichius, *Distant*, Ins. 329
 Lepadichthys, *Waite*, Pisces 27
 Lepchina, *Oberthür*, Ins. 253
 Lepidiolamprologus, *Pellegrin*, Pisces 35
 Lepidophthalmus, *Holmes*, Crust. 34
 Lepidophthirus, *Enderlein*, Ins. 340
 Leptalina, *Mabille*, Ins. 251
 Leptea, *Bolívar*, Ins. 360
 Leptergatis, *Holmberg*, Ins. 203
 Leptocallista, *Pilsbry*, Moll. 69
 Leptocebus, *Trouessart*, Mamm. 33
 Leptochalcis, *Kieffer*, Ins. 229
 Leptodella, *Reuter*, Ins. 344
 Leptogeneia, *Meyrick*, Ins. 294
 Leptolabis, *Topsent*, Spong. 25
 Leptometria, *Holmberg*, Ins. 203
 Leptonadata, *Aurivillius*, Ins. 260
 Leptoremus, *Casey*, Ins. 170
 Leptosastra, *Topsent*, Spong. 25
 Leptosurcula, *Casey*, Moll. 74
 Leptothecha, *Fauvel*, Ins. 164
 Leribe, *Péringuey*, Ins. 154
 Lessuerella, *Perner*, Moll. 86
 Leucoctenorrhœ, *Warren*, Ins. 279
 Leucolithodes, *Warren*, Ins. 279
 Leuconotus, *Bruner*, Ins. 360
 Leucoreas, *Warren*, Ins. 279
 Libavius, *Distant*, Ins. 323

- Licaphrops, *Ameghino*, Mamm. 50
 Limifossor, *Heath*, Moll. 91
 Limipecten, *Girty*, Moll. 90
 Limmatoblatta, *Handlirsch*, Ins. 125
 Limnichthys, *Waite*, Pisces 28
 Limnodriloides, *Pierantoni*, Verm. 38
 Limnopomus, *Dall*, Moll. 79
 Linoceratium, *Bruner*, Ins. 360
 Linshcosteus, *Distant*, Ins. 323
 Liobauius, *Casey*, Ins. 170
 Liocorida, *Reuter*, Ins. 326
 Liodermion, *Kirkaldy*, Ins. 315
 Liopholidophis, *Mocquard*, Rept. 27
 Lioscarites, *Maindron*, Ins. 130
 Liparophis, *Peracca*, Rept. 27
 Lippomanus, *Distant*, Ins. 324
 Lisitheria, *Cameron*, Ins. 224
 Lithoptera, *Popofsky*, Prot. 52
 Lixomorphus, *Faust*, Ins. 177
 Lobocryptus, *Schmiedeknecht*, Ins. 221
 Lobopelta, *Schouteden*, Ins. 317
 Lodryca, *Cameron*, Ins. 221
 Logima, *Eaton*, Ins. 302
 Lohmannella, *Neresheimer*, Arachn. 44
 Lopadoceras, *Buckman*, Moll. 60
 Lophiotoma, *Casey*, Moll. 74
 Lophochorista, *Warren*, Ins. 279
 Lophocelus, *Ameghino*, Mamm. 50
 Lophogododon, *Ameghino*, Mamm. 50
 Lopholambda, *Ameghino*, Mamm. 49
 Lophomastix, *Benedict*, Crust. 33
 Lophopygia, *Warren*, Ins. 279
 Lophoscelomyia, *Theobald*, Ins. 301
 Lophotosoma, *Warren*, Ins. 279
 Lorichius, *Distant*, Ins. 323
 Loxapicia, *Warren*, Ins. 279
 Loxilobus, *Hancock*, Ins. 360
 Loxiorhiza, *Warren*, Ins. 288
 Luciocyprinus, *Vaillant*, Pisces 48
 Lucitanus, *Distant*, Ins. 327
 Lucrinus, *Cambridge*, Arachn. 29
 Lycastoides, *Johnson*, Verm. 33
 Lycopsylla, *Rothschild*, Ins. 313
 Lymphocystis, *Woodcock*, Prot. 54
 Lynteria, *Cameron*, Ins. 221
 Lynamela, *Gahan*, Ins. 188
 Lyrolepis, *Romanowky*, Pisces 51
 Lyrosurcula, *Casey*, Moll. 74
 Lysacne, *Dall and Bartsch*, Moll. 83
 Lythrichthys, *Jordan and Starks*, Pisces 30
 Machiloides, *Silvestri*, Ins. 350
 Macrenches, *Meyrick*, Ins. 294
 Macrolister, *Lewis*, Ins. 146
 Macrorileya, *Ashmead*, Ins. 230
 Macrotona, *Meyrick*, Ins. 294
 Macrovespa, *Dalla Torre*, Ins. 208
 Maculotriton, *Dall*, Moll. 78
 Macusia, *Kaye*, Ins. 250
 Mæcnas, *Kirkaldy*, Ins. 321
 Mæro, *Cambridge*, Arachn. 25
 Maimon, *Trouessart*, Mamm. 33
 Malacodora, *Bedel*, Ins. 193
 Malalasta, *Distant*, Ins. 327
 Malaza, *Mabille*, Ins. 252
 Maldanopsis, *Verrill*, Verm. 34
 Mamaia, *Stebbing*, Crust. 28
 Mamuchus, *Fairmaire*, Ins. 178
 Manarina, *Mabille*, Ins. 252
 Mantellina, *Sacco*, Moll. 90
 Marbodus, *Distant*, Ins. 323
 Marichisme, *Kirkaldy*, Ins. 319
 Marpelites, *Cameron*, Ins. 221
 Matenesius, *Distant*, Ins. 327
 Matesia, *Lea*, Ins. 178
 Matschiella, *Poche*, Mamm. 48
 Maurachelia, *Bernhauer*, Ins. 136
 Maussenetia, *Cossmann*, Moll. 78
 Meandrella, *Perner*, Moll. 85
 Mecopelidnota, *Bates*, Ins. 156
 Mecynoptera, *Handlirsch*, Ins. 125
 Megablattina, *Sellards*, Ins. 126
 Megacalanus, *Wolfenden*, Crust. 51
 Megacanthopus, *Ducke*, Ins. 208
 Megacentrus, *Szépligeti*, Ins. 224
 Megalonychotherium, *Scott*, Mamm. 48
 Megapis, *Ashmead*, Ins. 204
 Megapisa, *Aurivillius*, Ins. 261
 Megarhogas, *Szépligeti*, Ins. 225
 Megasurcula, *Casey*, Moll. 75
 Megathericulus, *Ameghino*, Mamm. 50
 Melauergon, *Bethune-Baker*, Ins. 261
 Melanoscia, *Warren*, Ins. 280
 Melanosmicra, *Ashmead*, Ins. 230
 Melanotettix, *Bruner*, Ins. 361
 Melanthes, *Mabille*, Ins. 252
 Melaphe, *Cook*, Myr. 14
 Menuthias, *Kirkaldy*, Ins. 315
 Mercennus, *Distant*, Ins. 320
 Merogomphus, *Martin*, Ins. 348
 Merriamia, *Boulenger*, Rept. 30
 Mertila, *Distant*, Ins. 327
 Mesedra, *Warren*, Ins. 280
 Mesoagathis, *Cameron*, Ins. 225
 Mesocetus, *Fraas*, Mamm. 47
 Mesocleonus, *Faust*, Ins. 178
 Mesoptyclus, *Matsumura*, Ins. 335
 Mesoscolytus, *Brown*, Ins. 182

- Mesostenopsis, *Schmiedeknecht*, Ins. 221
 Mestor, *Kirkaldy*, Ins. 322
 Metabrixia, *Fowler*, Ins. 333
 Metachatina, *Pilsbry*, Moll. 69
 Metacorthylus, *Blandford*, Ins. 182
 Metacynorta, *Cambridge*, Arachn. 38
 Metandrocarpa, *Michaelsen*, Tun. 6
 Metapogon, *Coquillett*, Ins. 304
 Metavonones, *Cambridge*, Arachn. 38
 Metazaptix, *Pilsbry*, Moll. 68
 Metazygia, *Cambridge*, Arachn. 29
 Methorius, *Raffray*, Ins. 142
 Metopoxantho, *De Man*, Crust. 29
 Metriorrhynchomiris, *Kirkaldy*, Ins. 324
 Mevianes, *Simon*, Arachn. 32
 Mevius, *Distant*, Ins. 327
 Michaletia, *Cossmann*, Moll. 85
 Micrapis, *Ashmead*, Ins. 204
 Micrixia, *Fowler*, Ins. 333
 Microcentrus, *Szépligeti*, Ins. 225
 Microchalcis, *Kieffer*, Ins. 230
 Microcistela, *Pic*, Ins. 169
 Microcleonus, *Faust*, Ins. 178
 Microcleonus, *Desbrochers*, Ins. 178
 Microgoura, *Rothschild*, Aves 40
 Microlerida, *Fowler*, Ins. 333
 Microlyssa, *Riley*, Aves 51
 Micromasoria, *Kirkaldy*, Ins. 332
 Micropternodus, *Matthew*, Mamm. 36
 Microrutela, *Bates*, Ins. 156
 Microsurcula, *Casey*, Moll. 75
 Microtragulus, *Ameghino*, Mamm. 50
 Milda, *Dall and Bartsch*, Moll. 83
 Milleaster, *Ulrich*, Cœl. 19
 Millinaspis, *Weise*, Ins. 197
 Milocera, *Swinhoe*, Ins. 280
 Mimocellus, *Wasmann*, Ins. 167
 Mimophites, *Fauvel*, Ins. 136
 Mimoprora, *Warren*, Ins. 280
 Miocardiella, *Sacco*, Moll. 89
 Miolabis, *Matthew*, Mamm. 44
 Miopygium, *Bredden*, Ins. 318
 Mirocerus, *Ashmead*, Ins. 230
 Mischosmicra, *Ashmead*, Ins. 230
 Misumessus, *Banks*, Arachn. 31
 Mitona, *Raffray*, Ins. 142
 Molytophilus, *Hartmann*, Ins. 178
 Monandrocarpa, *Michaelsen*, Tun. 7
 Monarea, *Szépligeti*, Ins. 225
 Monocleus, *Jordan*, Ins. 184
 Monogenerina, *Spandel*, Prot. 47
 Monolophus, *Faust*, Ins. 178
 Monoraphis, *Schulze*, Spong. 14
 Monostilum, *Dall*, Moll. 78
 Monroa, *Warren*, Ins. 281
 Montandoneus, *Kirkaldy*, Ins. 315
 Montandoniella, *Schouteden*, Ins. 318
 Mormoniella, *Ashmead*, Ins. 230
 Morokasia, *Jacoby*, Ins. 194
 Morphomima, *Warren*, Ins. 281
 Morphotropis, *Perner*, Moll. 79
 Moschophoromys, *Trouessart*, Mamm. 40
 Muanza, *Distant*, Ins. 331
 Munza, *Distant*, Ins. 331
 Mycernus, *Brown*, Ins. 154
 Mycterocoris, *Uhler*, Ins. 327
 Myenchus, *Schuberg*, Verm. 53
 Mylantrin, *Aurivillius*, Ins. 261
 Myolestes, *Brèthes*, Ins. 305
 Myonyssus, *Tiraboschi*, Arachn. 45
 Myriopora, *Volz*, Cœl. 19
 Myrmecoleichus, *Berlese*, Arachn. 45
 Myrmonissus, *Berlese*, Arachn. 45
 Myrsinus, *Gahan*, Ins. 188
 Mysolis, *Kirkaldy*, Ins. 336
 Mystilus, *Distant*, Ins. 327
 Nakadaella, *Ancey*, Moll. 81
 Nalanda, *Théry*, Ins. 160
 Nanichisme, *Kirkaldy*, Ins. 319
 Nanniella, *Reuter*, Ins. 327
 Nannoalvus, *Kolbe*, Ins. 157
 Nanochronis, *Pellegrin*, Pisces 35
 Narcegaster, *Horvath*, Ins. 321
 Nasonia, *Ashmead*, Ins. 230
 Nathorstites, *Böhm*, Moll. 60
 Naticonema, *Perner*, Moll. 82
 Nebaliella, *Thiele*, Crust. 47
 Nectarodiata, *Holmberg*, Ins. 204
 Nematrochus, *Perner*, Moll. 85
 Nemoxenus, *Faust*, Ins. 178
 Nenemeca, *Raffray*, Ins. 142
 Neobapta, *Warren*, Ins. 281
 Neocatolaccus, *Ashmead*, Ins. 230
 Neodezia, *Warren*, Ins. 281
 Neodirades, *Warren*, Ins. 281
 Neofidonia, *Warren*, Ins. 281
 Neohalictoides, *Viereck*, Ins. 204
 Neohirasea, *Rehn*, Ins. 356
 Neolucia, *Waterhouse and Turner*, Ins. 250
 Neomeris, *Linstow*, Verm. 53
 Neomesostenus, *Schmiedeknecht*, Ins. 221
 Neomicrorbis, *Rovereto*, Verm. 34
 Neonematherium, *Ameghino*, Mamm. 50
 Neonemoria, *Warren*, Ins. 281
 Neopangasius, *Popta*, Pisces 46
 Neoplema, *Warren*, Ins. 281

- Neopolita, *Warren*, Ins. 281
 Neorileya, *Ashmead*, Ins. 230
 Neosconella, *Cambridge*, Arachn. 29
 Neoseius, *Oudemans*, Arachn. 45
 Neosyagrus, *Lea*, Ins. 178
 Neotaxia, *Dognin*, Ins. 281
 Nephrocoria, *Stichel*, Ins. 246
 Nerissella, *Jacoby*, Ins. 194
 Nervicompressa, *Bethune-Baker*, Ins. 261
 Nesiophædusa, *Pilsbry*, Moll. 68
 Nesohippus, *Ameghino*, Mamm. 49
 Nesolycaena, *Waterhouse and Turner*, Ins. 250
 Nesomyia, *Ashmead*, Ins. 230
 Nezumia, *Jordan and Starks*, Pisces 40
 Nicholsonia, *Bogatirow*, Cœl. 30
 Nichomachus, *Distant*, Ins. 327
 Nicostratus, *Distant*, Ins. 327
 Niphoparmena, *Aurivillius*, Ins. 188
 Nipponites, *Yabe*, Moll. 60
 Nodulina, *Raffray*, Ins. 142
 Nomimonyx, *Faust*, Ins. 178
 Notamphicyon, *Ameghino*, Mamm. 50
 Notanisomorpha, *Ashmead*, Ins. 230
 Nothamysium, *Hind*, Moll. 90
 Notochampsia, *Broom*, Rept. 29
 Notoprotonia, *Ameghino*, Mamm. 49
 Nyctereutica, *Turner*, Ins. 289
 Nycterorhinus, *Fairmaire*, Ins. 179
 Nyctibates, *Boulenger*, Rept. 36
 Nyctidea, *Reuter*, Ins. 327
 Nymannus, *Distant*, Ins. 328

 Ochisme, *Kirkaldy*, Ins. 315
 Ochleroptera, *Holmberg*, Ins. 212
 Ochrophlegma, *Bolívar*, Ins. 361
 Ochrorrhaca, *Breddin*, Ins. 318
 Ochrotettix, *Bruner*, Ins. 361
 Ocosia, *Jordan and Starks*, Pisces 31
 Octomitrus, *Prowazek*, Prot. 57
 Octomyodon, *Ameghino*, Mamm. 51
 Octosmicra, *Ashmead*, Ins. 230
 Ocyglossa, *Giard*, Prot. 57
 Ocynectes, *Jordan and Starks*, Pisces 29
 Odontogonus, *Bergroth*, Ins. 323
 Odontopsalis, *Burr*, Ins. 353
 Odontothynnus, *Cameron*, Ins. 212
 Odontotrupes, *Boucomont*, Ins. 151
 Edalechilus, *Fowler*, Pisces 41
 Edaloneura, *Mabille*, Ins. 252
 Edania, *Buckman*, Moll. 61

 Emida, *Gahan*, Ins. 188
 Emodana, *Gahan*, Ins. 188
 Enides, *Mabille*, Ins. 252
 Enomys, *Thomas*, Mamm. 40
 Ogovia, *Hansen and Sorensen*, Arachn. 37
 Ogulnia, *Cameron*, Ins. 221
 Oibophthalmus, *Simon*, Arachn. 32
 Oligozaptix, *Pilsbry*, Moll. 68
 Olindioides, *Goto*, Cœl. 20
 Ollia, *Dyar*, Ins. 289
 Ololaelaps, *Berlese*, Arachn. 45
 Omotimus, *Raffray*, Ins. 142
 Onchodellus, *Berlese*, Arachn. 46
 Oncinoproctus, *Breddin*, Ins. 318
 Oncochalcis, *Cameron*, Ins. 230
 Oncotophasma, *Rehn*, Ins. 356
 Oneilella, *Cameron*, Ins. 222
 Onomaus, *Distant*, Ins. 328
 Onychelus, *Cook*, Myr. 16
 Onycocaris, *Nobili*, Crust. 36
 Occamenta, *Péringuey*, Ins. 154
 Oophædusa, *Pilsbry*, Moll. 68
 Ophelius, *Raffray*, Ins. 142
 Ophiocrisis, *Koehler*, Echin. 83
 Ophiocirce, *Koehler*, Echin. 83
 Ophiocrates, *Koehler*, Echin. 84
 Ophiodoris, *Koehler*, Echin. 84
 Ophiolutea, *Koehler*, Echin. 84
 Ophiomidas, *Koehler*, Echin. 85
 Ophiomoeris, *Koehler*, Echin. 85
 Ophiomytis, *Koehler*, Echin. 85
 Ophiononeura, *Cameron*, Ins. 222
 Ophiopallas, *Koehler*, Echin. 85
 Ophrygonius, *Zang*, Ins. 149
 Ophthalmotilapia, *Pellegrin*, Pisces 35
 Opisthoctenodon, *Broom*, Rept. 33
 Opisthodiscus, *Cohn*, Verm. 49
 Orbignyella, *Ulrich and Bassler*, Bry. 12
 Oreohelix, *Pilsbry*, Moll. 66
 Oreonoma, *Warren*, Ins. 281
 Oreophœtes, *Rehn*, Ins. 356
 Oreovalgus, *Kolbe*, Ins. 158
 Oria, *Distant*, Ins. 331
 Origenes, *Marshall*, Ins. 179
 Orinella, *Dall and Bartsch*, Moll. 83
 Ornicholax, *Carriker*, Ins. 345
 Ornithissus, *Fowler*, Ins. 333
 Oroacrodon, *Ameghino*, Mamm. 49
 Orthoarthrus, *Ameghino*, Mamm. 50
 Orthochalcis, *Kieffer*, Ins. 230
 Orthonecroscia, *Kirby*, Ins. 356
 Orthopodomys, *Theobald*, Ins. 301
 Orthoptila, *Meyrick*, Ins. 295
 Orthosurcula, *Casey*, Moll. 75

- Orthotropis, *Jordan*, Ins. 185
 Oslaria, *Dyar*, Ins. 269
 Osmanoceras, *Kittl*, Moll. 61
 Ostiolum, *Pratt*, Verm. 49
 Ostorodias, *Distant*, Ins. 324
 Otospira, *Perner*, Moll. 82
 Otouphepus, *Cushman*, Rept. 29
 Ouranion, *Kirkaldy*, Ins. 319
 Oxycordyla, *Topsent*, Spong. 21
 Oxycorephus, *Cameron*, Ins. 230
 Oxydactylus, *Peterson*, Mamm. 44
 Oxyopsis, *Caudell*, Ins. 355
 Oxytoxia, *Mabille*, Ins. 252
- Pachycerianthus, *Roule*, Cœl. 32
 Pachycrepoides, *Ashmead*, Ins. 230
 Pachylister, *Lewis*, Ins. 146
 Pachynasua, *Ameghino*, Mamm. 50
 Pachyntheisa, *Fowler*, Ins. 333
 Pachystrophia, *Perner*, Moll. 80
 Pachytragus, *Schlosser*, Mamm. 43
 Pacificana, *Hogg*, Arachn. 32
 Pædiovalgus, *Kolbe*, Ins. 158
 Pagodea, *Perner*, Moll. 85
 Paincia, *Buckman*, Moll. 61
 Païta, *Fauvel*, Ins. 167
 Paiwarria, *Kaye*, Ins. 250
 Palæochamæleo, *De Stefano*, Rept. 25
 Palæocolpodia, *Meunier*, Ins. 124
 Palæognoriste, *Meunier*, Ins. 125
 Palæoheteronyza, *Meunier*, Ins. 125
 Palæoheterotricha, *Meunier*, Ins. 125
 Palæomantis, *Handlirsch*, Ins. 125
 Palæomastax, *Handlirsch*, Ins. 126
 Palæonustus, *Perner*, Moll. 82
 Palæopalara, *Handlirsch*, Ins. 125
 Palæorhinus, *Williston*, Rept. 32
 Palorthopteron, *Handlirsch*, Ins. 126
 Panaphis, *Kirkaldy*, Ins. 337
 Panœnia, *Meyrick*, Ins. 295
 Panilurus, *Jacoby*, Ins. 194
 Paniscomima, *Enderlein*, Ins. 212
 Papagoa, *Bruner*, Ins. 361
 Parabæra, *Doquin*, Ins. 289
 Parabasis, *Bethune-Baker*, Ins. 269
 Parabolbocoris, *Schouteden*, Ins. 318
 Paracamenta, *Péringuey*, Ins. 154
 Paraceryx, *Bethune-Baker*, Ins. 262
 Parachetolyga, *Bischof*, Ins. 309
 Parachleabata, *Bruner*, Ins. 361
 Parachrysops, *Bethune-Baker*, Ins. 250
 Paraclemensia, *Busck*, Ins. 295
 Paracelodus, *Ameghino*, Mamm. 49
 Paracoleotichus, *Schouteden*, Ins. 318
 Paracomucha, *Warren*, Ins. 282
- Paracrias, *Ashmead*, Ins. 230
 Paracrossochilus, *Popta*, Pisces 48
 Paractenodia, *Péringuey*, Ins. 171
 Paradiastylis, *Calman*, Crust. 39
 Paradidelphys, *Ameghino*, Mamm. 50
 Paradohertya, *Bethune-Baker*, Ins. 262
 Paradoxodes, *Warren*, Ins. 282
 Paradoxorhyncha, *Chapman*, Crust. 54
 Paragambusia, *Meek*, Pisces 43
 Parahyænodon, *Ameghino*, Mamm. 50
 Paralagena, *Dall*, Moll. 78
 Paraleptynia, *Caudell*, Ins. 356
 Paraleucocelis, *Preiss*, Ins. 158
 Paralioceryon, *Ganglbauer*, Ins. 133
 Paralixus, *Csiki*, Ins. 179
 Paralucia, *Waterhouse and Turner*, Ins. 250
 Paramusonia, *Rehn*, Ins. 355
 Paramyocastor, *Ameghino*, Mamm. 50
 Paramyxine, *Dean*, Pisces 57
 Paranauchenia, *Ameghino*, Mamm. 50
 Paranotropis, *Fowler*, Pisces 48
 Paranteopsis, *McMurrick*, Cœl. 32
 Paranthribus, *Jordan*, Ins. 185
 Parapantilius, *Reuter*, Ins. 328
 Parapelopides, *Zang*, Ins. 149
 Parapenæon, *Richardson*, Crust. 42
 Paraphnæus, *Thierry-Mieg*, Ins. 250
 Paraplesius, *Hartmann*, Ins. 179
 Paraplodes, *Warren*, Ins. 282
 Parapœcilocoris, *Schouteden*, Ins. 318
 Parapœcilophila, *Hauser*, Ins. 158
 Parapteromalus, *Ashmead*, Ins. 230
 Paraptorthodius, *Schaeffer*, Ins. 163
 Pararctotherium, *Ameghino*, Mamm. 50
 Parasaphes, *Ashmead*, Ins. 230
 Paraschizognathus, *Ohaus*, Ins. 156
 Parascina, *Stebbing*, Crust. 46
 Parascutigera, *Verhoeff*, Myr. 9
 Parasiro, *Hansen and Sorensen*, Arachn. 37
 Paraspalangia, *Ashmead*, Ins. 230
 Parasteiromys, *Ameghino*, Mamm. 50
 Paratapis, *Depéret and Douxami*, Mamm. 45
 Parategastes, *Sars*, Crust. 51
 Paratennus, *Ameghino*, Mamm. 50
 Paraterobia, *Ashmead*, Ins. 230
 Paraugaptilus, *Wolfenden*, Crust. 51
 Paraulax, *Kieffer*, Ins. 235
 Paravonones, *Cambridge*, Arachn. 38

- Parawixia, *Cambridge*, Arachn. 30
 Parazaptyx, *Pilsbry*, Moll. 68
 Parazeuzera, *Bethune-Baker*, Ins. 262
 Parelodina, *Bethune-Baker*, Ins. 250
 Parexillis, *Jordan*, Ins. 185
 Parocalea, *Bernhauer*, Ins. 137
 Parochlerus, *Breddin*, Ins. 318
 Parochthiphila, *Czerny*, Ins. 311
 Parocyusa, *Bernhauer*, Ins. 137
 Paromala, *Warren*, Ins. 282
 Paronesimus, *Stebbing*, Crust. 45
 Paronipora, *Capelee*, Coel. 32
 Parosorius, *Bernhauer*, Ins. 137
 Parourapteryx, *Thierry-Mieg*, Ins. 282
 Parvanemus, *Mayer*, Coel. 20
 Parviterebra, *Pilsbry*, Moll. 75
 Parvochlamys, *Sacco*, Moll. 90
 Pasaphylla, *Péringuey*, Ins. 154
 Patreus, *Raffray*, Ins. 142
 Pauluccia, *Brusina*, Moll. 79
 Paumomua, *Jacoby*, Ins. 194
 Pauropsalta, *Goding and Froggatt*, Ins. 331
 Peggichisme, *Kirkaldy*, Ins. 320
 Pegylidius, *Péringuey*, Ins. 154
 Pelorotelus, *Ashmead*, Ins. 230
 Penardia, *Cash*, Prot. 43
 Pentalagus, *Lyon*, Mamm. 42
 Pentanodes, *Schaeffer*, Ins. 188
 Pentanymphe, *Hodgson*, Crust. 61
 Pentasmicra, *Ashmead*, Ins. 231
 Pentatropis, *Faust*, Ins. 179
 Pontias, *Richardson*, Crust. 41
 Peradorcas, *Thomas*, Mamm. 48
 Peratodonta, *Aurivillius*, Ins. 262
 Peregrinator, *Kirkaldy*, Ins. 322
 Peregrinus, *Kirkaldy*, Ins. 333
 Perhippidion, *Ameghino*, Mamm. 49
 Periacrodon, *Ameghino*, Mamm. 49
 Peribolodes, *Warren*, Ins. 282
 Pericamenta, *Péringuey*, Ins. 154
 Periphymopsis, *Schouteden*, Ins. 318
 Peritragus, *Aurivillius*, Ins. 188
 Peronodorus, *Bergh*, Moll. 72
 Phænacantha, *Horváth*, Ins. 321
 Phænopharos, *Kirby*, Ins. 356
 Phaneroturis, *Bruner*, Ins. 361
 Phancrozonida, *Delage*, Echin. 79
 Phanophilus, *Ameghino*, Mamm. 49
 Phanosolena, *Schaeffer*, Ins. 185
 Pharyllus, *Distant*, Ins. 328
 Phasmatocoris, *Breddin*, Ins. 323
 Phaulocylliba, *Berlese*, Arachn. 46
 Phaulodinychus, *Berlese*, Arachn. 46
 Phaulosis, *Weise*, Ins. 194
 Phaulosomus, *Faust*, Ins. 179
 Pheidoloxenus, *Ashmead*, Ins. 231
 Philas, *Portevin*, Ins. 145
 Philodromoides, *Scheffer*, Arachn. 31
 Philosepedon, *Eaton*, Ins. 302
 Philosyrtris, *Giard*, Verm. 56
 Phlebosphales, *Warren*, Ins. 282
 Phlœographtis, *Meyrick*, Ins. 295
 Phlyctænopora, *Topsent*, Spong. 25
 Phoberus, *Raffray*, Ins. 143
 Phœnixauchenia, *Ameghino*, Mamm. 50
 Pholeoteras, *Sturany*, Moll. 68
 Phoxargyrea, *Fowler*, Pisces 41
 Phrygiomurex, *Dall*, Moll. 78
 Phthartus, *Handlirsch*, Ins. 125
 Phthirocoris, *Distant*, Ins. 324
 Phyllochisme, *Kirkaldy*, Ins. 321
 Phyllolouche, *Popofsky*, Prot. 52
 Physalidonotus, *Ehlers*, Verm. 35
 Physalozercion, *Berlese*, Arachn. 46
 Physoglenes, *Simon*, Arachn. 23
 Phyteumas, *Bolívar*, Ins. 361
 Phytoseius, *Ribaya*, Arachn. 46
 Pietteia, *Cossmann*, Moll. 78
 Piezonemus, *Jordan*, Ins. 185
 Pilchenia, *Ameghino*, Mamm. 50
 Pilematechinus, *Agassiz*, Echin. 68
 Pionaces, *Simon*, Arachn. 32
 Pipetta, *Loman*, Crust. 61
 Piptocentrus, *Horváth*, Ins. 321
 Pistosia, *Weise*, Ins. 197
 Placcrias, *Lucas*, Rept. 33
 Planitrochus, *Perner*, Moll. 85
 Platephippius, *Navás*, Ins. 361
 Platylistrum, *Schulze*, Spong. 14
 Platysphyrus, *Sloane*, Ins. 131
 Plectonotus, *Clarke*, Moll. 86
 Pleiophylla, *Péringuey*, Ins. 154
 Pleistophylla, *Péringuey*, Ins. 154
 Plerisca, *Bolívar*, Ins. 361
 Plesistigmodes, *Ashmead*, Ins. 231
 Pleurolopha, *Turner*, Ins. 282
 Pleuromphalus, *Perner*, Moll. 80
 Pleurophorella, *Girty*, Moll. 87
 Pleuroxonotus, *Reuter*, Ins. 328
 Plexotemnus, *Ameghino*, Mamm. 50
 Pliotropis, *Kobelt*, Moll. 63
 Plocamiopsis, *Topsent*, Spong. 25
 Ploconema, *Perner*, Moll. 85
 Plocovalgus, *Kolbe*, Ins. 158
 Pœcilochlora, *Warren*, Ins. 282
 Pœcilolagus, *Lyon*, Mamm. 42
 Pogonocœbus, *Trouessart*, Mamm. 33
 Polistella, *Ashmead*, Ins. 208
 Polistoides, *Dalla Torre*, Ins. 209
 Polyandrocampa, *Michaelsen*, Tun. 7
 Polychelus, *Luze*, Ins. 138
 Polychisme, *Kirkaldy*, Ins. 320
 Polychnomyia, *Bischof*, Ins. 309

- Polymniella, *Verrill*, Verm. 32
 Polyniphes, *Kaye*, Ins. 250
 Polyplax, *Enderlein*, Ins. 340
 Polystylops, *Ameghino*, Mamm. 50
 Pomponatius, *Distant*, Ins. 320
 Pontogammarus, *Sowinsky*, Crust. 45
 Poppia, *Konow*, Ins. 237
 Poricella, *Canu*, Bry. 15
 Poronotellus, *Kirkaldy*, Ins. 324
 Porteria, *Simon*, Arachn. 32
 Poultonia, *Neave*, Ins. 250
 Pparchus, *Broun*, Ins. 180
 Preprotheriops, *Ameghino*, Mamm. 50
 Preshole, *Handlirsch*, Ins. 125
 Prionolixus, *Desbrochers*, Ins. 180
 Priperia, *Simon*, Arachn. 30
 Proactica, *Walsingham*, Ins. 295
 Proarctotherium, *Ameghino*, Mamm. 50
 Probænia, *Weise*, Ins. 197
 Probergrothius, *Kirkaldy*, Ins. 320
 Procatopus, *Boulenger*, Pisces 42
 Prodamaliscus, *Schlosser*, Mamm. 43
 Prodecatoma, *Ashmead*, Ins. 231
 Prodieynodon, *Broom*, Rept. 33
 Prodontria, *Broun*, Ins. 154
 Prodosiarcha, *Meyrick*, Ins. 295
 Prodrornus, *Distant*, Ins. 328
 Proectocion, *Ameghino*, Mamm. 50
 Proglaeopithecus, *Ameghino*, Mamm. 49
 Progarzonina, *Ameghino*, Mamm. 50
 Progonopteryx, *Handlirsch*, Ins. 125
 Promacrauchenia, *Ameghino*, Mamm. 50
 Promioclænus, *Trouessart*, Mamm. 38
 Promyrmephagus, *Ameghino*, Mamm. 50
 Pronolagus, *Lyon*, Mamm. 42
 Pronopharynx, *Cohn*, Verm. 50
 Pronycticebus, *Trouessart*, Mamm. 34
 Propantostylops, *Ameghino*, Mamm. 50
 Proplatygaster, *Kieffer*, Ins. 234
 Propreprotherium, *Ameghino*, Mamm. 50
 Prorocrania, *Turner*, Ins. 283
 Prosagola, *Raffray*, Ins. 143
 Proscyllium, *Hilgendorf*, Pisces 55
 Prosolarium, *Perner*, Moll. 80
 Prospaltella, *Ashmead*, Ins. 231
 Prosthennops, *Matthew and Gidley*, Mamm. 44
 Prostoma, *Warren*, Ins. 283
 Protamandua, *Ameghino*, Mamm. 50
 Protapoica, *Dalla Torre*, Ins. 209
 Proteinissus, *Fowler*, Ins. 334
 Proteriades, *Titus*, Ins. 205
 Proterix, *Matthew*, Mamm. 36
 Protobalanus, *Cavallery and Mesnil*, Verm. 57
 Protocallidium, *Csiki*, Ins. 189
 Protocetus, *Fraas*, Mamm. 47
 Protocryptus, *Schmiedeknecht*, Ins. 222
 Protoculex, *Felt*, Ins. 301
 Protodiscoelius, *Dalla Torre*, Ins. 209
 Protolechia, *Meyrick*, Ins. 295
 Protomacronema, *Ulmer*, Ins. 342
 Protopalpythoa, *Verrill*, Cœl. 33
 Protosiren, *Abel*, Mamm. 47
 Protosurcula, *Casey*, Moll. 75
 Protothelpus, *Verrill*, Verm. 35
 Protrachysaurus, *De Stefano*, Rept. 25
 Proutista, *Kirkaldy*, Ins. 332
 Provola, *Swinhoe*, Ins. 283
 Pselaphelia, *Aurivillius*, Ins. 263
 Pselliophora, *Verhoeff*, Myr. 9
 Pseudachloa, *Péringuey*, Ins. 154
 Pseudatideus, *Wolfenden*, Crust. 52
 Pseudasellodes, *Warren*, Ins. 283
 Pseudelma, *Kobelt*, Moll. 62
 Pseudeurina, *de Meijere*, Ins. 311
 Pseudilema, *Bethune-Baker*, Ins. 263
 Pseudobracon, *Szépligeti*, Ins. 225
 Pseudobradya, *Sars*, Crust. 52
 Pseudocamenta, *Péringuey*, Ins. 154
 Pseudochaeta, *Kirby*, Ins. 355
 Pseudocrociniis, *Swinhoe*, Ins. 283
 Pseudocucullæa, *Solger*, Moll. 91
 Pseudodreata, *Bethune-Baker*, Ins. 263
 Pseudofeltria, *Soar*, Arachn. 46
 Pseudogargetta, *Bethune-Baker*, Ins. 263
 Pseudohelicoptera, *Fowler*, Ins. 334
 Pseudolabis, *Matthew*, Mamm. 44
 Pseudolacerta, *De Stefano*, Rept. 25
 Pseudomasareus, *Desbrochers*, Ins. 131
 Pseudomimus, *Hartmann*, Ins. 180
 Pseudopedaria, *Felsche*, Ins. 152
 Pseudopercis, *Miranda Ribeira*, Pisces 38
 Pseudoryxa, *Schmidt*, Ins. 335
 Pseudosalius, *Ashmead*, Ins. 213
 Pseudosastra, *Jacoby*, Ins. 195
 Pseudoschizognathus, *Ohaus*, Ins. 156

- Pseudostromborrhinus*, *Heller*, Ins. 180
Pseudotectus, *Perner*, Moll. 85
Pseudotrachus, *Schlosser*, Mamm. 43
Pseudotruncatella, *Andreae*, Moll. 81
Pseudotylostoma, *Ihering*, Moll. 82
Pseudotyphotherium, *Ameghino*, Mamm. 49
Pseustophylla, *Péringuey*, Ins. 154
Psilochalcis, *Kieffer*, Ins. 231
Psilocochlis, *Dall*, Moll. 77
Psilotrichus, *Luze*, Ins. 138
Psodopsis, *Warren*, Ins. 283
Psoralis, *Mabille*, Ins. 252
Psorosina, *Dyar*, Ins. 289
Psychophagus, *Mayr*, Ins. 231
Pteroceroopsis, *Swinhoe*, Ins. 263
Pterygascidia, *Sluiter*, Tun. 7
Ptilogonia, *Bischof*, Ins. 309
Ptilophyllodromia, *Bezzi*, Ins. 306
Ptomatis, *Clarke*, Moll. 86
Ptychocladia, *Ulrich and Bassler*, Bry. 17
Ptychocynodon, *Seeley*, Rept. 33
Ptychonema, *Perner*, Moll. 82
Ptychorhytida, *Kobelt*, Moll. 62
Purcellia, *Hansen and Sorensen*, Arachn. 37
Pycnomma, *Rutter*, Pisces 32
Pycnomutilla, *Ashmead*, Ins. 213
Pycnotrochus, *Perner*, Moll. 85
Pygæomorpha, *Bethune-Baker*, Ins. 263
Pyralophodon, *Ameghino*, Mamm. 50
Pyrrhochalcia, *Mabille*, Ins. 252

Quadrimetron, *Popofsky*, Prot. 52
Quadrinervus, *Cossmann*, Moll. 78
Quadristaurus, *Popofsky*, Prot. 52
Quercetanus, *Distant*, Ins. 323

Radamellus, *Raffray*, Ins. 143
Ragnar, *Kirkaldy*, Ins. 324
Ramella, *Schulze*, Spong. 17
Raphidocystis, *Penard*, Prot. 50
Rathymotherium, *Ameghino*, Mamm. 50
Reedia, *Ashmead*, Ins. 213
Regania, *Jordan and Starks*, Pisces 40
Rekoa, *Kaye*, Ins. 250
Renicola, *Cohn*, Verm. 50
Renifer, *Pratt*, Verm. 50
Reuterista, *Kirkaldy*, Ins. 324
Rhabdochæta, *de Meijere*, Ins. 311

Rhabdoploca, *Topsent*, Spong. 25
Rhabdospira, *Perner*, Moll. 80
Rhacocassis, *Spaeth*, Ins. 198
Rhamphixius, *Fowler*, Ins. 334
Rheopresbe, *Jordan and Starks*, Pisces 29
Rhinura, *Warren*, Ins. 284
Rhodanomys, *Depéret and Douxami*, Mamm. 41
Rhodomena, *Warren*, Ins. 284
Rhombotrypa, *Ulrich and Bassler*, Bry. 13
Rhopalithes, *Grabau*, Moll. 77
Rhynchomesostoma, *Luther*, Verm. 44
Rhynchophalera, *Aurivillius*, Ins. 263
Rhypastus, *Fairmaire*, Ins. 180
Ricuzenius, *Jordan and Starks*, Pisces 29
Rihana, *Distant*, Ins. 331
Robertsonella, *Titus*, Ins. 206
Ropaliceschatus, *Reuter*, Ins. 328
Rosetta, *Popofsky*, Prot. 52
Rotellomphalus, *Perner*, Moll. 85
Rozinante, *Stebbing*, Crust. 45
Rulandus, *Distant*, Ins. 323
Ruscula, *Casey*, Moll. 75

Sabellicus, *Distant*, Ins. 328
Sabljaria, *Brusina*, Moll. 66
Saccoina, *Dall and Bartsch*, Moll. 84
Saccoploca, *Warren*, Ins. 284
Sadaka, *Distant*, Ins. 331
Salagosa, *Raffray*, Ins. 143
Saprus, *Blackburn*, Ins. 152
Sarcoborus, *Oudemans*, Arachn. 46
Sarega, *Mabille*, Ins. 252
Sargocentron, *Fowler*, Pisces 39
Sarisophora, *Meyrick*, Ins. 296
Sarostegia, *Topsent*, Spong. 17
Sarotorna, *Meyrick*, Ins. 296
Saycia, *Sars*, Crust. 49
Sayiella, *Ashmead*, Ins. 231
Scapanodon, *Broom*, Rept. 32
Scaptocosa, *Banks*, Arachn. 35
Scaridea, *Jenkins*, Pisces 34
Scelidotheriops, *Ameghino*, Mamm. 51
Scenidiopsis, *Turner*, Ins. 290
Sclerothamnopsis, *Wilson*, Spong. 16
Schizanopterus, *Cameron*, Ins. 213
Schizoblattina, *Sellards*, Ins. 126
Schizochirus, *Waite*, Pisces 28
Schizocosa, *Chamberlin*, Arachn. 35
Schlettereriella, *Szépligeti*, Ins. 225

- Schmidtia, *Jordan and Starks*, Pisces 29
 Schmidtina, *Jordan and Starks*, Pisces 29
 Schonlandella, *Cameron*, Ins. 225
 Schuchertella, *Girty*, Brach. 7
 Schwarzella, *Ashmead*, Ins. 231
 Sciapobus, *Daniel*, Ins. 180
 Sciarella, *Meunier*, Ins. 125
 Scirtetica, *Holmberg*, Ins. 206
 Sclerodoris, *Eliot*, Moll. 72
 Scotocyma, *Warren*, Ins. 284
 Scotoophilus, *Hartmann*, Ins. 180
 Scotolinx, *Ashmead*, Ins. 231
 Scutigerides, *Silvestri*, Myr. 9
 Scutigerina, *Silvestri*, Myr. 10
 Scutomys, *Theobald*, Ins. 301
 Scutops, *Coquillett*, Ins. 311
 Scymnophagus, *Ashmead*, Ins. 231
 Scymnopsis, *Jordan*, Ins. 185
 Scytinoptera, *Handlirsch*, Ins. 125
 Seytoglossa, *Luze*, Ins. 138
 Sebaia, *Oudemans*, Arachn. 47
 Sebakue, *Péringuey*, Ins. 155
 Sebastiscus, *Jordan and Starks*, Pisces 30
 Segestriella, *Purcell*, Arachn. 23
 Seguenziella, *Sacco*, Moll. 80
 Selenechinus, *de Meijere*, Echin. 72
 Sellinema, *Perner*, Moll. 85
 Semnosia, *Daniel*, Ins. 189
 Sepidiocoris, *Schouteden*, Ins. 319
 Serapista, *Cockerell*, Ins. 206
 Serdis, *Mabille*, Ins. 252
 Seridentus, *Osborn*, Ins. 323
 Serpho, *Hutton*, Moll. 64
 Sesellius, *Distant*, Ins. 324
 Severinina, *Schouteden*, Ins. 319
 Seymouria, *Broili*, Rept. 33
 Shalisha, *Cameron*, Ins. 222
 Siderus, *Kaye*, Ins. 250
 Siebenrockia, *Poche*, Rept. 27
 Siettitia, *Abeille*, Ins. 133
 Sigmomys, *Ameghino*, Mamm. 50
 Silphosoma, *Portevin*, Ins. 145
 Silvestrina, *Prever*, Prot. 49
 Silvitettix, *Bruner*, Ins. 362
 Simplicus, *Ameghino*, Mamm. 50
 Sinoennea, *Kobelt*, Moll. 62
 Sinophthalmus, *Coquillett*, Ins. 311
 Sinutropis, *Perner*, Moll. 80
 Sisantum, *Bruner*, Ins. 362
 Slossonella, *Dyar*, Ins. 264
 Smenodoca, *Meyrick*, Ins. 296
 Sminthocoris, *Distant*, Ins. 324
 Snowiellus, *Hine*, Ins. 303
 Socarnella, *Walker*, Crust. 45
 Socnopæa, *Stromer*, Pisces 46
 Solenispa, *Weise*, Ins. 198
 Solenopotes, *Enderlein*, Ins. 340
 Somatoxena, *Aurivillius*, Ins. 264
 Sophianus, *Distant*, Ins. 328
 Sophraenella, *Jacoby*, Ins. 195
 Sorecocephala, *Bernhauer*, Ins. 138
 Southia, *Kirkaldy*, Ins. 332
 Spathopus, *Ashmead*, Ins. 231
 Spatularia, *van Deventer*, Ins. 296
 Spharactinomyxon, *Caullery and Mesnil*, Prot. 56
 Sphaerolulaps, *Berlese*, Arachn. 47
 Sphaeromimonectes, *Woltereck*, Crust. 46
 Sphaeronellopsis, *Hansen*, Crust. 52
 Sphaeroseius, *Berlese*, Arachn. 47
 Sphaleractis, *Meyrick*, Ins. 296
 Sphenalia, *Daniel*, Ins. 189
 Sphendononema, *Verhoeff*, Myr. 10
 Sphigmocephalus, *Enderlein*, Ins. 324
 Sphinctovalgus, *Kolbe*, Ins. 158
 Sphintia, *Schaus*, Ins. 264
 Spilojoppa, *Cameron*, Ins. 222
 Spilopimpla, *Cameron*, Ins. 222
 Spilovalgus, *Kolbe*, Ins. 158
 Spiticeras, *Uhtig*, Moll. 61
 Sporostigena, *Bethune-Baker*, Ins. 264
 Squamosala, *Bethune-Baker*, Ins. 264
 Stælonchodes, *Kirby*, Ins. 357
 Stantonia, *Ashmead*, Ins. 225
 Stauronereis, *Verrill*, Verm. 36
 Stegasta, *Meyrick*, Ins. 296
 Stegias, *Richardson*, Crust. 42
 Stegius, *Distant*, Ins. 324
 Stellacantha, *Popofsky*, Prot. 52
 Stellolonche, *Popofsky*, Prot. 52
 Stelodoryx, *Topsent*, Spong. 25
 Stenolandra, *Fluirmaire*, Ins. 181
 Stenomesioidea, *Ashmead*, Ins. 231
 Stenonyx, *Lull*, Rept. 29
 Stereotoxodon, *Ameghino*, Mamm. 49
 Sthenobela, *Turner*, Ins. 290
 Stictocoris, *Kirkaldy*, Ins. 315
 Stigmatella, *Ulrich and Bassler*, Bry. 13
 Stigmatocrepis, *Ashmead*, Ins. 232
 Stigmomela, *Csiki*, Ins. 195
 Stilhippus, *Ameghino*, Mamm. 49
 Stiva, *Hedley*, Moll. 80
 Stlengis, *Jordan and Starks*, Pisces 29
 Stokeia, *Buckman*, Moll. 61
 Stomega, *Dall and Bartsch*, Moll. 84
 Strabops, *Jordan*, Ins. 185
 Stramia, *Marshall*, Ins. 181

- Streptochetus*, *Seely*, Spong. 26
Strombopsis, *Raffray*, Ins. 143
Struthiolariopsis, *Wilckens*, Moll. 78
Styloceros, *Meyrick*, Ins. 296
Stylophorella, *Ashmead*, Ins. 232
Styphlosoma, *Blandford*, Ins. 183
Sulcorinella, *Dall and Bartsch*, Moll. 84
Sundarion, *Kirkaldy*, Ins. 336
Suntemnonycha, *Péringuey*, Ins. 155
Surculoma, *Casey*, Moll. 75
Sustenodactylus, *Lull*, Rept. 33
Sva, *Enderlein*, Ins. 344
Sycoscapterella, *Ashmead*, Ins. 232
Sycoscapteridea, *Ashmead*, Ins. 232
Symbollophlebia, *Handlirsch*, Ins. 126
Symbolistis, *Meyrick*, Ins. 296
Symmius, *Richardson*, Crust. 41
Symmymica, *Wheeler*, Ins. 217
Sympheidole, *Wheeler*, Ins. 217
Symphonistis, *Turner*, Ins. 290
Symphylax, *Horváth*, Ins. 321
Sympiesomorpha, *Ashmead*, Ins. 232
Synale, *Mabille*, Ins. 252
Synapte, *Mabille*, Ins. 252
Synapticola, *Malard*, Moll. 87
Synechocryptus, *Schmiedeknecht*, Ins. 222
Syngonovalgus, *Kolbe*, Ins. 158
Synogdox, *Aurivillius*, Ins. 264
Synsillus, *Verrill*, Vermes 32
Syntaruchoides, *Kaye*, Ins. 251
Syrnolina, *Dall and Bartsch*, Moll. 84
Systatica, *Turner*, Ins. 285

Tachardiæphagus, *Ashmead*, Ins. 232
Tachinæphagus, *Ashmead*, Ins. 232
Tæniola, *Dall*, Moll. 78
Taftia, *Ashmead*, Ins. 232
Tagalisca, *Horváth*, Ins. 321
Tamarinus, *Trouessart*, Mamm. 34
Tamboeria, *Seeley*, Rept. 33
Tancredus, *Distant*, Ins. 329
Tanita, *Bolívar*, Ins. 362
Tanqua, *Blanchard*, Verm. 54
Tanyjoppa, *Cameron*, Ins. 222
Tanynotus, *Cameron*, Ins. 235
Tapesia, *Bolívar*, Ins. 362
Taphrocranium, *Horváth*, Ins. 321
Tapinomorphus, *Hartmann*, Ins. 181
Tapinotaspis, *Holmberg*, Ins. 206
Taramelliceras, *Cumpana*, Moll. 61
Tarsoplectrus, *Lull*, Rept. 33

Tatria, *Kowalewski*, Verm. 47
Tectospira, *Picard*, Moll. 85
Tegeotherium, *Ameghino*, Mamm. 49
Teleorhinus, *Osborn*, Rept. 29
Teleutemnesta, *Holmberg*, Ins. 206
Telmatoscopus, *Eaton*, Ins. 302
Temnospira, *Perner*, Moll. 85
Tenuitarsus, *Bolívar*, Ins. 362
Termitogeton, *Desneux*, Ins. 346
Tersomia, *Kirby*, Ins. 357
Terpnoclorus, *Fairmaire*, Ins. 195
Terupis, *Simon*, Arachn. 32
Tetracystis, *Schuchert*, Echin. 95
Tetradelus, *Fauvel*, Ins. 138
Tetragonites, *Kittl*, Moll. 61
Tetranemopteryx, *Ashmead*, Ins. 232
Tetranychoides, *Banks*, Arachn. 47
Tetrarthra, *Dalla Torre*, Ins. 209
Tetrasmicra, *Ashmead*, Ins. 232
Tetrochlerus, *Breddin*, Ins. 319
Tettigoniella, *Jacobi*, Ins. 336
Texas, *Kirkaldy*, Ins. 315
Thalamarchis, *Meyrick*, Ins. 296
Thalattosaurus, *Merriam*, Rept. 32
Thanatopphantia, *Kirkaldy*, Ins. 332
Thanatophara, *Kirkaldy*, Ins. 332
Thascia, *Cameron*, Ins. 223
Thaumastosaurus, *De Stefano*, Rept. 25
Thaumatoxena, *Breddin and Börner*, Ins. 315
Thaumonectes, *Senna*, Crust. 46
Theocopterus, *Smith*, Pisces 30
Thereuonema, *Verhoeff*, Myr. 10
Thereuopoda, *Verhoeff*, Myr. 10
Thermia, *Hutton*, Moll. 64
Thiotricha, *Meyrick*, Ins. 296
Thnetus, *Handlirsch*, Ins. 125
Thomosis, *Brown*, Ins. 133
Thorichthys, *Meek*, Pisces 35
Thoscora, *Schaus*, Ins. 265
Thrasymedes, *Kirkaldy*, Ins. 336
Threticus, *Eaton*, Ins. 302
Thrombus, *Oudemans*, Arachn. 47
Thyorchilus, *Oberholser*, Aves 57
Thurselinus, *Distant*, Ins. 330
Thynnica, *Miculicich*, Crust. 52
Thyregis, *Blackburn*, Ins. 152
Thyreosphe, *Ashmead*, Ins. 213
Thyreothremma, *Holmberg*, Ins. 206
Thyripton, *Bruner*, Ins. 362
Thysanichthys, *Jordan and Starks*, Pisces 30
Thysanocraspeda, *Warren*, Ins. 285
Thysanoctena, *Warren*, Ins. 285
Thysdarius, *Raffray*, Ins. 143
Tianella, *Attems*, Myr. 13

- Tichonia, *Semenow*, Ins. 132
 Timarchella, *Jacoby*, Ins. 195
 Tlaocera, *Péringuey*, Ins. 155
 Tmetomorphia, *Warren*, Ins. 286
 Tocris, *Broun*, Ins. 181
 Tœchomya, *Clarke*, Moll. 91
 Tomogonus, *d'Orbigny*, Ins. 152
 Tomopleura, *Casey*, Moll. 75
 Tomopygia, *Burr*, Ins. 353
 Tortilla, *Perner*, Moll. 85
 Toxotemnus, *Ameghino*, Mamm. 50
 Toxus, *Eigenmann*, Pisces 43
 Trachelonotus, *Reuter*, Ins. 329
 Trachyforcepia, *Topsent*, Spong. 25
 Trachytropis, *Jordan*, Ins. 185
 Tragelaphodes, *Bergroth*, Ins. 324
 Trapezorrhina, *Hauser*, Ins. 158
 Triarthra, *Dalla Torre*, Ins. 209
 Trichaulus, *Enderlein*, Ins. 340
 Trichencyrtus, *Ashmead*, Ins. 232
 Trichobasis, *Reuter*, Ins. 329
 Trichocentrus, *Horváth*, Ins. 321
 Trichocerapis, *Cockerell*, Ins. 206
 Trichochalcis, *Kieffer*, Ins. 232
 Trichochermes, *Kirkaldy*, Ins. 337
 Trichoclystis, *Warren*, Ins. 286
 Trichodriloides, *Fauvel*, Verm. 39
 Trichosphærule, *Fleischer*, Ins. 145
 Trichosterrha, *Warren*, Ins. 286
 Trichovalgus, *Kolbe*, Ins. 158
 Tricliophora, *Jacoby*, Ins. 195
 Trigonogastra, *Ashmead*, Ins. 232
 Trigonomelea, *Warren*, Ins. 286
 Trimegistus, *Jordan and Snyder*,
 Pisces 29
 Trimerocystis, *Schuchert*, Echin. 95
 Triœdusa, *Mabille*, Ins. 252
 Trioplognathus, *Ohaus*, Ins. 156
 Triplatyx, *Horváth*, Ins. 319
 Tripleurocrinus, *Wood*, Echin. 93
 Triptognathus, *Berthoumieu*, Ins.
 223
 Trismicra, *Ashmead*, Ins. 232
 Tristylotus, *Parkes*, Coel. 21
 Tritadelpha, *Meyrick*, Ins. 296
 Triticites, *Girty*, Prot. 49
 Tritodiscoelius, *Dalla Torre*, Ins. 209
 Tritoniscus, *Dall*, Moll. 78
 Tritonocauda, *Dall*, Moll. 78
 Trizona, *Popofsky*, Prot. 52
 Trochuda, *Schaus*, Ins. 265
 Tropæas, *Dall and Bartsch*, Moll. 84
 Tropidogastra, *Ashmead*, Ins. 233
 Tropisurcula, *Casey*, Moll. 75
 Trotorhombia, *Warren*, Ins. 286
 Trypanophis, *Keysseltz*, Prot. 57
 Tubogyra, *Perner*, Moll. 86
 Tubomphalus, *Perner*, Moll. 86
 Tulbaghia, *Péringuey*, Ins. 155
 Turnebus, *Distant*, Ins. 329
 Turriger, *Kertész*, Ins. 312
 Turritriton, *Dall*, Moll. 78
 Tylobolus, *Cook*, Myr. 16
 Tylocrinus, *Wood*, Echin. 93
 Tylokepon, *Stebbing*, Crust. 42
 Tylopeltis, *Reuter*, Ins. 329
 Tyraquellus, *Distant*, Ins. 329
 Umbospira, *Perner*, Moll. 86
 Umbotrochus, *Perner*, Moll. 86
 Umbotropis, *Perner*, Moll. 86
 Udenocera, *Ricardo*, Ins. 303
 Ugada, *Distant*, Ins. 331
 Uhligia, *Koenen*, Moll. 61
 Ulfa, *Dall and Bartsch*, Moll. 84
 Uliura, *Warren*, Ins. 286
 Umjaba, *Distant*, Ins. 332
 Uncifer, *Jordan*, Ins. 185
 Urobopyrus, *Richardson*, Crust. 42
 Urocalpe, *Warren*, Ins. 286
 Uroderostenus, *Ashmead*, Ins. 233
 Urodinychus, *Berlese*, Arachn. 48
 Uroentedon, *Ashmead*, Ins. 233
 Uroiphis, *Berlese*, Arachn. 48
 Urometopus, *Formanek*, Ins. 181
 Uroobovella, *Berlese*, Arachn. 48
 Uroplitella, *Berlese*, Arachn. 48
 Urotrachytes, *Berlese*, Arachn. 49
 Ussuria, *Nikolski*, Pisces 49
 Vagna, *Dall and Bartsch*, Moll. 84
 Valdiviella, *Steuer*, Crust. 52
 Vallerioli, *Distant*, Ins. 329
 Vanduzeeina, *Schouteden*, Ins. 319
 Varania, *Simroth*, Moll. 63
 Varanosaurus, *Brioli*, Rept. 33
 Varicobela, *Casey*, Moll. 75
 Varneria, *Dyar*, Ins. 291
 Varroa, *Oudemans*, Arachn. 49
 Vaucheria, *Pallary*, Moll. 63
 Vellitor, *Jordan and Starks*, Pisces
 29
 Venustria, *Goding and Froggatt*,
 Ins. 332
 Veræqua, *Jordan and Starks*, Pisces
 32
 Vercoia, *Baker*, Crust. 37
 Versispira, *Perner*, Moll. 82
 Verticipronus, *Hedley*, Moll. 89
 Vestura, *Swinhoe*, Ins. 271
 Veternio, *Snyder*, Pisces 45
 Vidovicia, *Brusina*, Moll. 66
 Vijaya, *Walker*, Crust. 46
 Vilia, *Dall and Bartsch*, Moll. 84

- Villanovanus, *Distant*, Ins. 324
 Visma, *Dall and Bartsch*, Moll. 84
 Volkelius, *Distant*, Ins. 329
 Voluspa, *Dall and Bartsch*, Moll. 84
 Vulnus, *Sykes*, Moll. 66
- Wagneriana, *Cambridge*, Arachn. 30
 Westerlundia, *Kobelt*, Moll. 67
 Westermannias, *Kirkaldy*, Ins. 322
 Westwoodella, *Ashmead*, Ins. 233
 Westwoodiella, *Szépligeti*, Ins. 225
 Wettsteinia, *Dalla Torre*, Ins. 209
 Willistoniella, *Meunier*, Ins. 125
- Xanium, *Enderlein*, Ins. 181
 Xanthoatomus, *Ashmead*, Ins. 233
 Xanthomelanus, *Ashmead*, Ins. 233
 Xanthomicrodus, *Cameron*, Ins. 225
 Xenapates, *Eaton*, Ins. 302
 Xenocara, *Regan*, Pisces 46
 \Xenogramma, *Waite*, Pisces 33
 Xenolina, *Jacoby*, Ins. 195
 Xenomacrus, *Faust*, Ins. 181
 Xenopelidnota, *Bates*, Ins. 156
 Xenotherium, *Aneghino*, Mamm. 49
 Xerociris, *Cockerell*, Ins. 271
- Xestopsylla, *Baker*, Ins. 314
 Xosa, *Kirkaldy*, Ins. 315
 Xostias, *Kirkaldy*, Ins. 332
 Xosophora, *Kirkaldy*, Ins. 332
 Xosopsaltria, *Kirkaldy*, Ins. 332
 Xylecata, *Swinhoe*, Ins. 265
 Xystocheir, *Cook*, Myr. 14
- Yanga, *Distant*, Ins. 332
- Zagrammosoma, *Ashmead*, Ins. 233
 Zaischnopsis, *Ashmead*, Ins. 233
 Zanchisme, *Kirkaldy*, Ins. 324
 Zanchius, *Distant*, Ins. 329
 Zanolphara, *Kirkaldy*, Ins. 336
 Zaommomyia, *Ashmead*, Ins. 233
 Zapata, *Bruner*, Ins. 362
 Zelinkia, *Giard*, Verm. 56
 Zenida, *Mabille*, Ins. 252
 Zethoides, *Cameron*, Ins. 209
 Zeuctostyla, *Warren*, Ins. 286
 Zophopetes, *Mabille*, Ins. 252
 Zygacantha, *Popofsky*, Prot. 52
 Zygapophysia, *Popofsky*, Prot. 52
 Zygolonche, *Popofsky*, Prot. 52
 Zygolonchidium, *Popofsky*, Prot. 52
 Zygoptera, *Popofsky*, Prot. 52

CORRIGENDA.

- GEN. SUB., p. 46, Title 805, for "SOHOETENSACK" read "SCHOETENSACK."
- INSECTA, p. 133, line 6 from bottom, for "*Annommatophilus*" read "*Anommatophilus*."
- „ p. 145, line 4, for "*Blatrodromus*" read "*Blattodromus*."
- „ p. 173, line 17 from bottom, for "*Centorrhynchus*" read "*Ceutorrhynchus*."
- „ p. 217, line 11, for "*Sympheisole*" read "*Sympheidole*."
- „ p. 231, line 2, for "*Pestasmicra*" read "*Pentasmicra*."

END OF THE FORTY-FIRST VOLUME.

THE ZOOLOGICAL RECORD.

THE object of the ZOOLOGICAL RECORD is to give, by means of an annual Volume, complete lists of the Works and Publications relating to Zoology in all its branches that have appeared during the year preceding the issue of the Volume, together with full information as to the points they deal with, arranged in such a manner as to serve as an Index to the literature of Zoology in all parts of the globe, and thus to form a repertory that will retain its value for the Student in future years.

The 'Zoological Record,' after Vol. 40, will be published by the Society at the price of 40s. per volume. But all Members of the Zoological Society of London will have the privilege of receiving it, including the cost of delivery, at a subscription price of 30s. per annum. This Subscription is due on the 1st of July in every year, and the privilege of Subscription is forfeited unless the amount be paid before the 1st of December following.

The Zoological Society, having purchased the entire stock of the 'Zoological Record,' is able to supply complete sets. The thirty-seven Volumes to the end of the nineteenth century, and the Index-Volume (1880-1900) in addition, will be supplied for £15 net (or *without* the Index-Volume, for £14. 10s. net). Volumes of any single year (exclusive of the last five volumes and Vol. 6) can likewise be supplied at 10s. per volume net.

The price of the Index Zoologicus (Index Volume 1880-1900) is 20s., to Fellows 18s.

Members of the Society wishing to subscribe to the 'Record' are requested to apply at this office for a Form, to be returned when filled up and signed by the subscriber. In order to facilitate the payment of the subscription, a Banker's Order Form is also supplied to those who prefer that mode of payment. This order, when filled up and signed, should be sent to the Society's office for registration; it will then be sent to the Agents named therein.

Learned Societies and Institutions and members of the former Zoological Record Association are permitted to subscribe to the 'Record' on the same conditions as are accorded to Members of the Zoological Society.

The divisions of the Zoological Record may be obtained separately as shown on the next page.

SEPARATE DIVISIONS OF THE ZOOLOGICAL RECORD.

At present each Volume of the ZOOLOGICAL RECORD consists of 20 separately paged Divisions. These may be obtained separately, in paper covers, stitched and lettered.

The following are the Divisions and their net prices, viz.:—

		s.	d.
List of abbreviations of journals, etc.	2	0
Special Records, viz.:—			
I.	General Subjects	2	6
II.	Mammalia	2	6
III.	Aves	6	0
IV.	Reptilia and Batrachia	2	6
V.	Pisces	2	6
VI.	Tunicata	1	0
VII.	Mollusca	4	0
VIII.	Brachiopoda	1	0
IX.	Bryozoa	1	0
X.	Crustacea	2	6
XI.	Arachnida	2	0
XII.	Myriopoda	1	6
XIII.	Insecta	12	0
XIV.	Echinoderma	3	6
XV.	Vermes	3	0
XVI.	Cœlenterata	1	6
XVII.	Spongiæ	2	0
XVIII.	Protozoa	2	0
Index of new names of genera and subgenera	2	0

On receipt of the price any Division will be forwarded as soon as ready.

These separate Divisions can be obtained from the Zoological Society, 3 Hanover Square, London, and also from Messrs Friedländer & Sohn, 11 Carlstrasse, Berlin. Cheques and Post-office orders should be made payable to "The Zoological Society" and crossed "Drummond's."

P. CHALMERS MITCHELL,
Secretary.

December 1905.

ZOOLOGICAL SOCIETY OF LONDON,
3, HANOVER SQUARE, W.

LIST OF VOLUMES OF THE 'ZOOLOGICAL RECORD.'

The Record of Zoological Literature, 1864—1868, Vols. i—v. Edited by ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.Z.S., &c. Price 10s. each Volume. Net.

The Record of Zoological Literature, 1869, Volume Sixth. Edited by ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.R.S., F.Z.S., &c. London, 1870. Price 30s.

The Zoological Record for 1870—1872, Vols. vii—ix. Edited by ALFRED NEWTON, M.A., F.R.S., F.L.S., V.P.Z.S., &c. Price 10s. each Volume. Net.

The Zoological Record for 1873—1883, Vols. x—xx. Edited by EDWARD CALDWELL RYE, F.Z.S., M.E.S. Price 10s. each Volume. Net.

The Zoological Record for 1884, 1885, Vols. xxi, xxii. Edited by F. JEFFREY BELL, M.A. Price 10s. each Volume. Net.

The Zoological Record for 1886—1890, Vols. xxiii—xxvii. Edited by FRANK E. BEDDARD, M.A., F.Z.S. Price 10s. each Volume. Net.

The Zoological Record for 1891—1899, Vols. xxviii—xxxvi. Edited by D. SHARP, M.A., F.R.S., F.Z.S., &c. Price 10s. each Volume. Net.

The Zoological Record, Volume the Thirty-seventh; being Records of Zoological Literature relating chiefly to the year 1900. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. A. Herdman, E. R. Sykes, E. A. Smith, G. C. Crick, A. W. Brown, D. Sharp, F. A. Bather, A. Willey, and E. A. Minchin. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1901. Price 30s.

The Zoological Record, Volume the Thirty-eighth; being Records of Zoological Literature relating chiefly to the year 1901. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, Alice L. Embleton, E. R. Sykes, E. A. Smith, S. Pace, Albert Brown, D. Sharp, F. A. Bather and E. A. Minchin. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1902. Price 30s.

The Zoological Record, Volume the Thirty-ninth; being Records of Zoological Literature relating chiefly to the year 1902. By D. Sharp, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. T. Calman, E. R. Sykes, E. A. Smith, Alice L. Embleton, F. A. Bather, E. A. Minchin and H. M. Woodcock. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1903. Price 30s.

The Zoological Record, Volume the Fortieth; being Records of Zoological Literature relating chiefly to the year 1903. By D. Sharp, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. T. Calman, E. R. Sykes, E. A. Smith, Alice L. Embleton, F. A. Bather, E. A. Minchin, and H. M. Woodcock. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1904. Price 30s.

The Zoological Record, Volume the Forty-first; being Records of Zoological Literature relating chiefly to the year 1904. By D. Sharp, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. T. Calman, E. R. Sykes, E. A. Smith, Alice L. Embleton, F. Silvestri, E. Simon, F. A. Bather, W. Woodland, and H. M. Woodcock. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1905. Price 40s.

Index Zoologicus. An alphabetical list of names of genera and subgenera proposed for use in Zoology, as recorded in the Zoological Record 1880—1900; together with other names not included in the "Nomenclator zoologicus" of S. H. Scudder. Compiled (for the Zoological Society of London) by CHARLES OWEN WATERHOUSE and edited by DAVID SHARP, Editor of the Zoological Record. London, 1902. Price to Fellows, 18s.; price to the public, 20s.

These publications may be obtained at the SOCIETY'S OFFICE (3 Hanover Square, W.).

31
681 (46)

This preservation photocopy
was made and hand bound at BookLab, Inc.
in compliance with copyright law. The paper,
Weyerhaeuser Cougar Opaque Natural,
meets the requirements of ANSI/NISO
Z39.48-1992 (Permanence of Paper).



Austin 1994

SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01350 8544